Fagor Automation S. Coop.

ENCODER LINEAL MODELO: L UNITARIA
LINEAR ENCODER MODEL: L SINGLE

MANUAL DE INSTALACION
INSTALLATION MANUAL

Manual Code: 14460131
Manual Version: 1201

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4	Posibilidades de montaje
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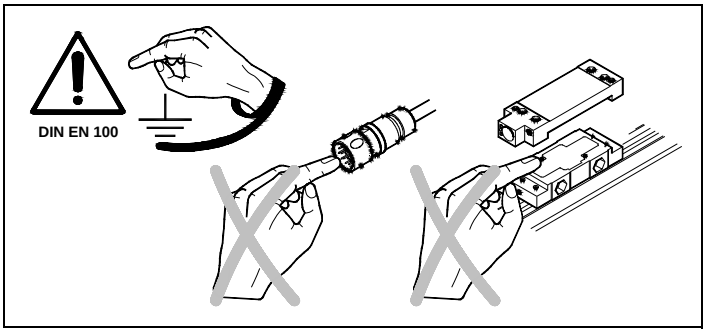
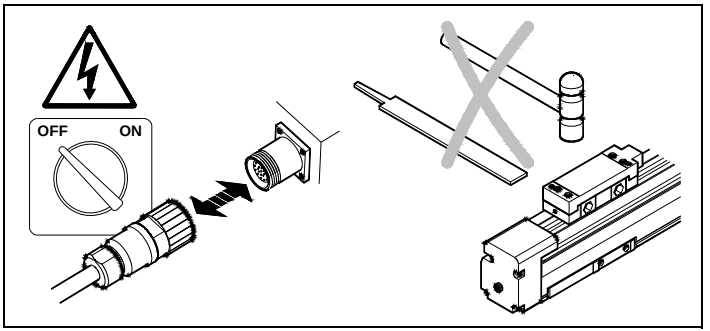
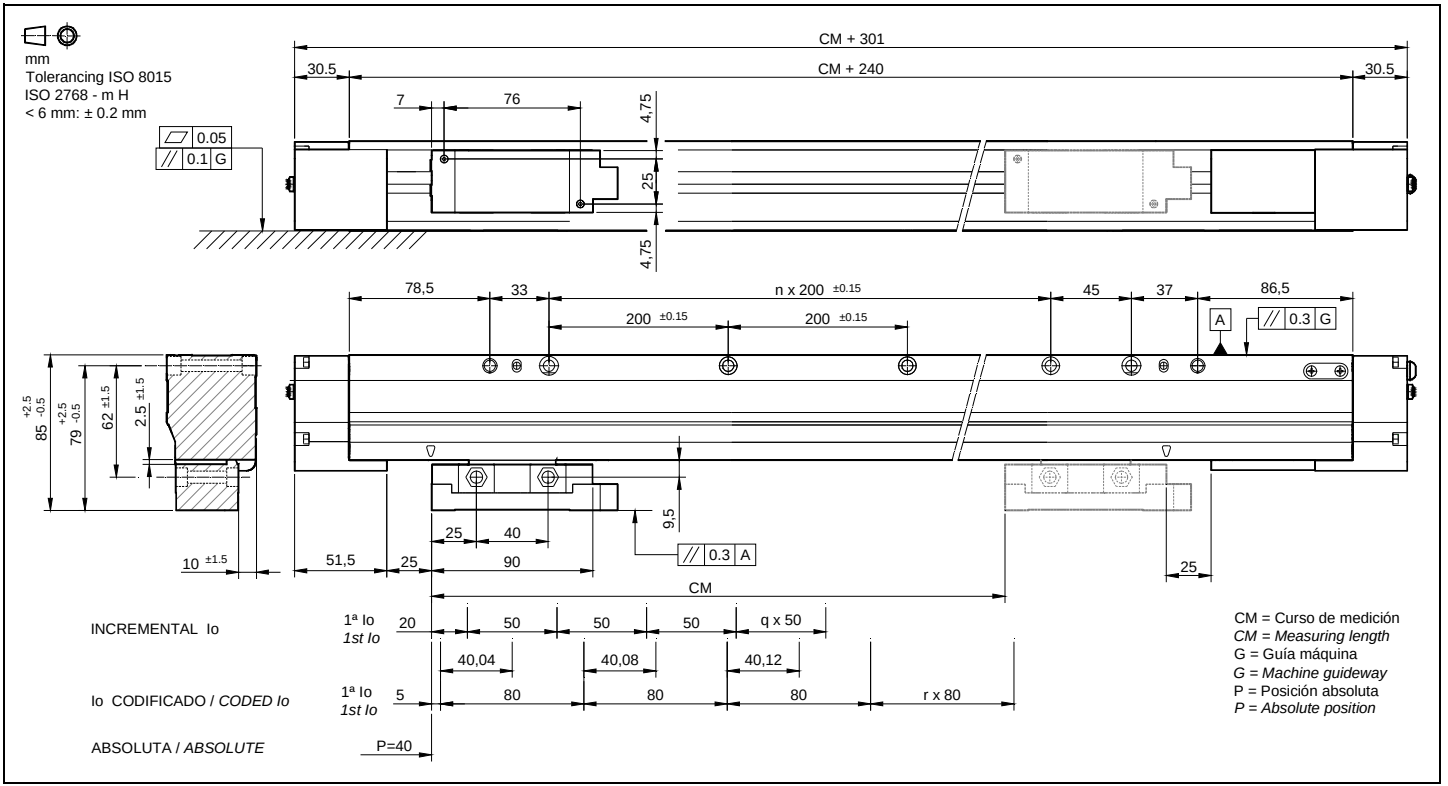
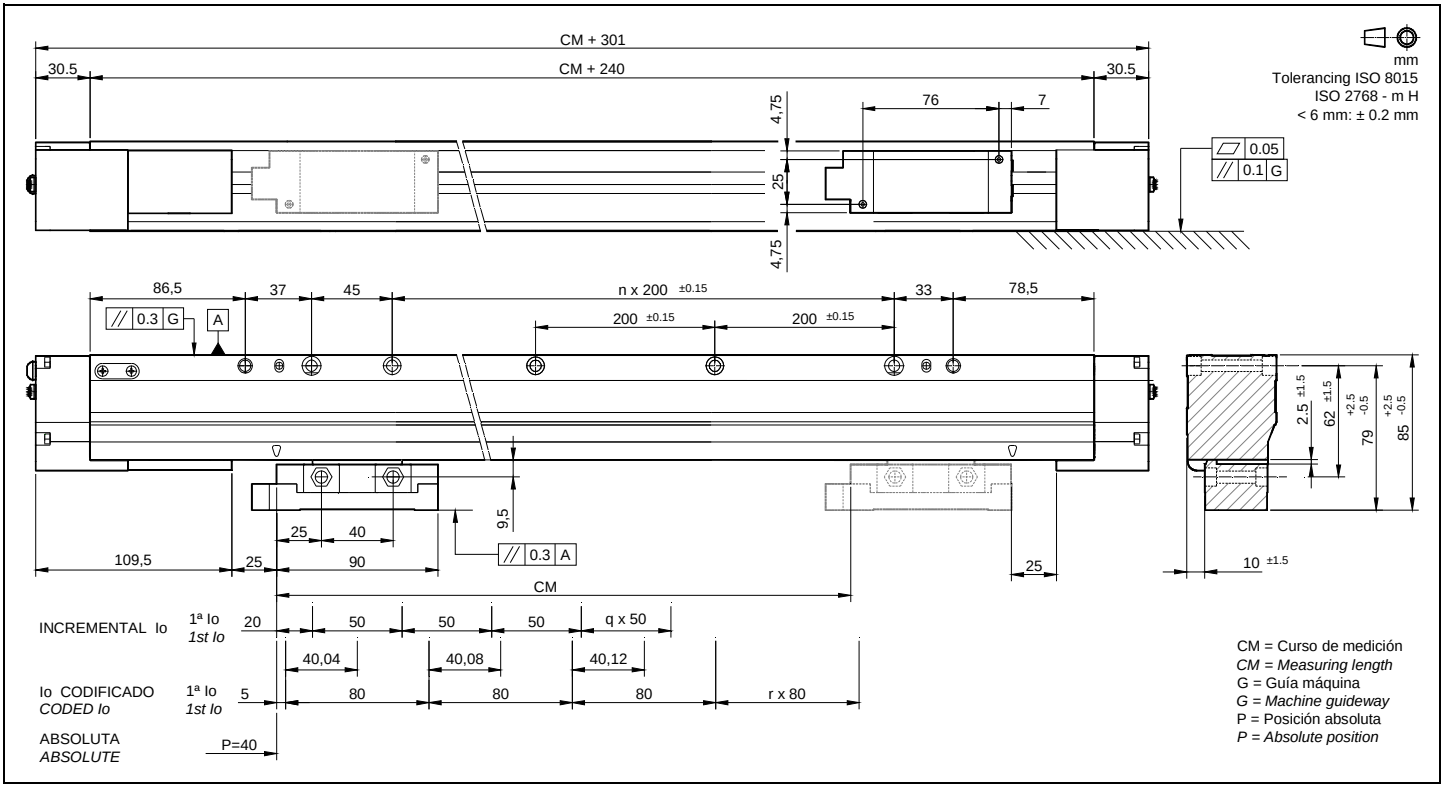






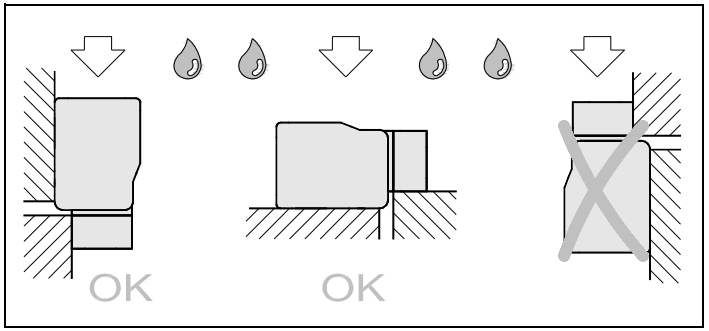
MODELO ESTANDAR.

STANDARD MODEL.



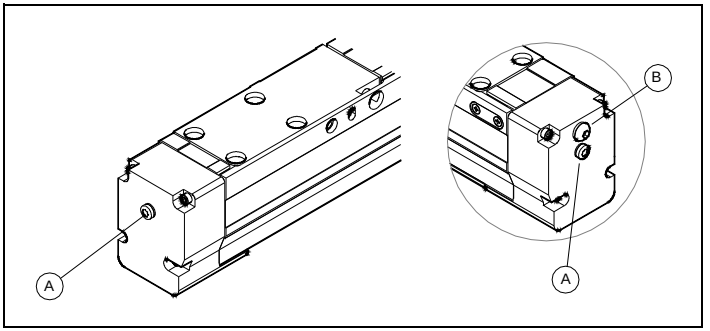
MODELO ESPEJO.

MIRROR MODEL.



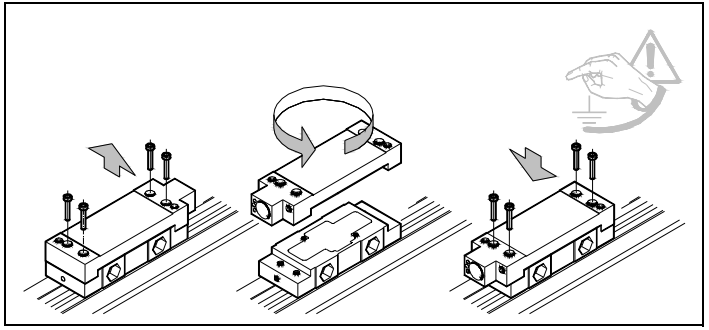
Montar con los labios de estanqueidad no orientados a posibles fuentes de contaminación.

Mount it with the sealing lips facing away from contaminating elements.



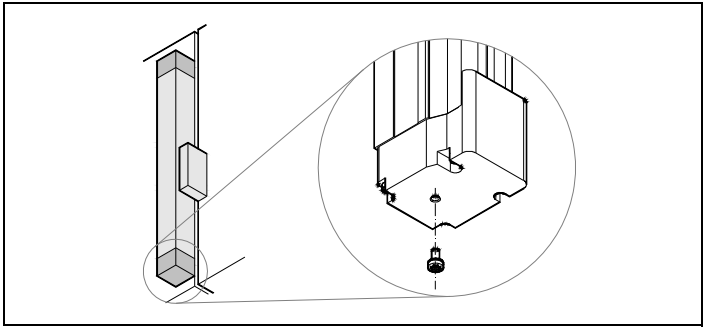
A: Entradas de aire.
B: Tensor del fleje.

A: Air intakes.
B: Tape tensor.



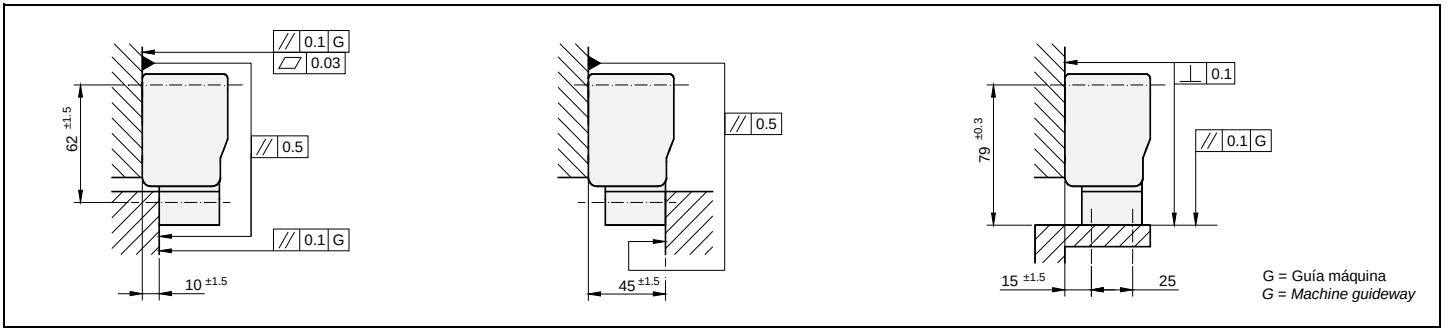
Es posible orientar la salida del conector a ambos lados.

The connector exit may be oriented at both ends.



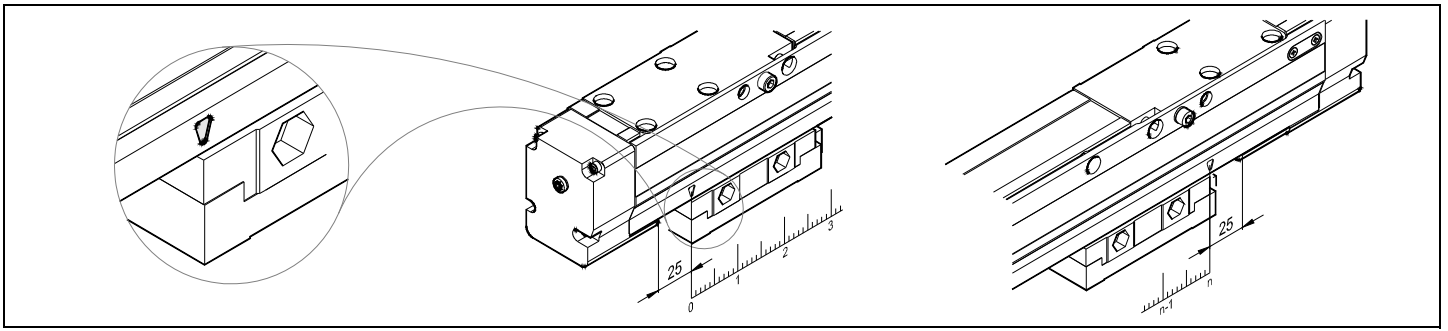
Si se monta la regla verticalmente y no se instala ningún equipo de aire, conviene quitar el tornillo de entrada de aire inferior.

When mounting the scale vertically and no air filter is installed, remove the bottom air intake screw.



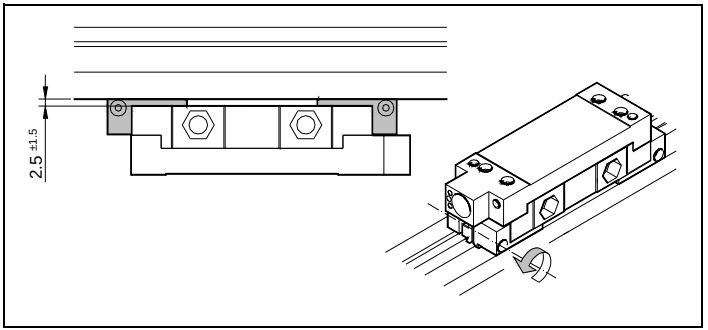
Posibilidades de montaje y tolerancias.

Mounting possibilities and tolerances.



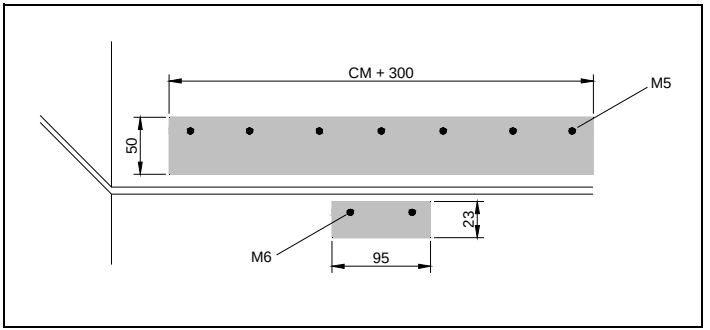
Las marcas triangulares de la regla definen el inicio y el final del curso de medición.

The triangle marks of the scale indicate the beginning and end of the measuring length.



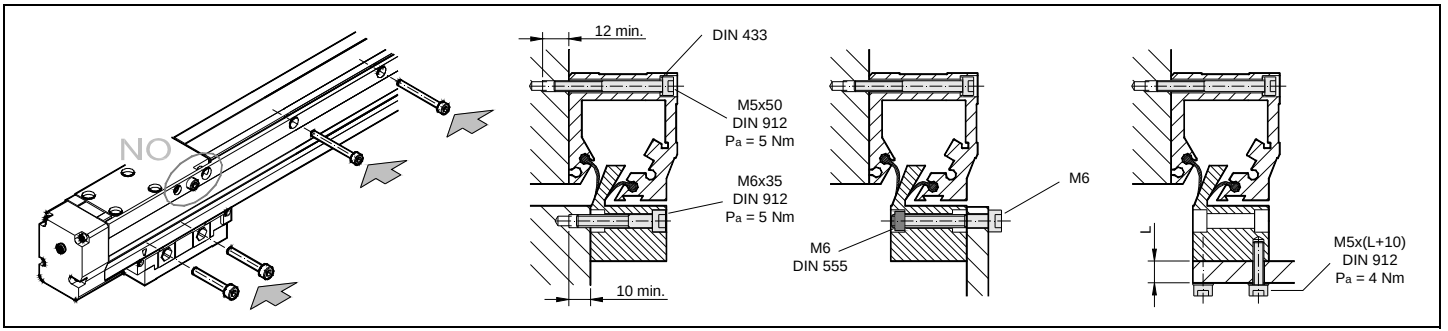
Aflojar los tornillos para posicionar la cabeza en la zona de montaje.
Los soportes fijan la distancia de separación (2.5 mm) entre la cabeza y la regla.

Loosen the screws to position the reader head in the mounting area.
The supports set the 2.5 mm gap between the reader head and the scale.



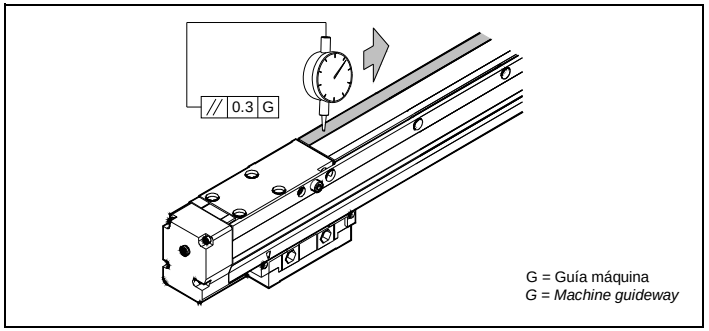
Realizar los agujeros para amarrar la regla.
Los agujeros de los pasadores se realizarán más tarde.
El área marcada estará libre de pintura.

Make the holes to secure the scale.
The holes for the dowel pins will be made later.
The marked area must be free of paint.



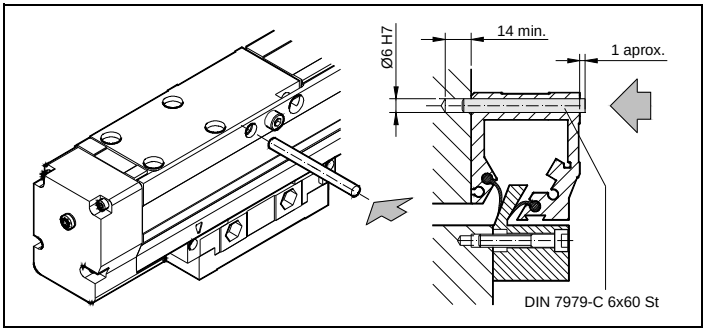
Premontar la regla y la cabeza lectora.
Montar todos los tornillos excepto en los extremos de la regla (ver figura).

Premount the scale and the reader head.
Mount all the screws except at both ends of the scale (see drawing).



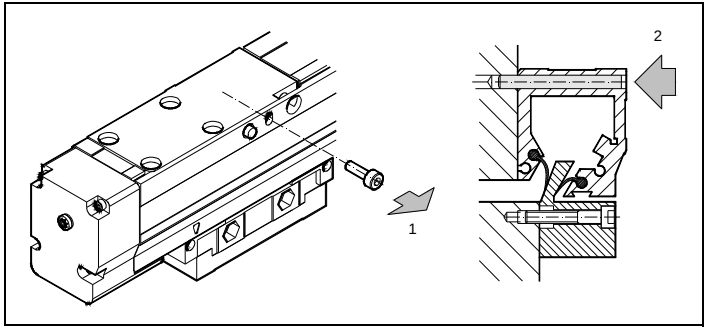
Alinear la regla.
Terminar de apretar los tornillos de la regla y la cabeza.
La figura muestra la zona en la que se ha de palpar con el reloj.

Align the scale.
Finish tightening the screws of the scale and the reader head.
The drawing shows the area to be dial indicated.



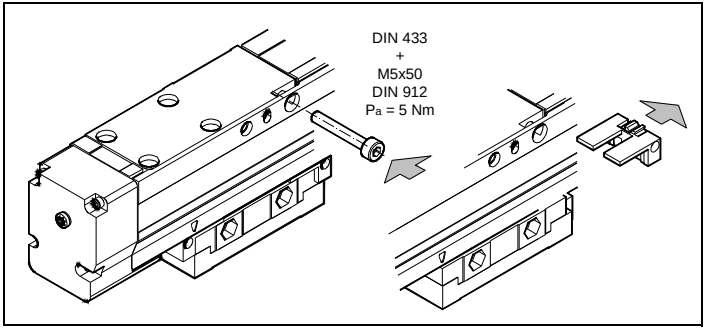
Mecanizar a la vez la regla y la bancada a diámetro 6H7.
Montar los dos pasadores a ambos lados de la regla.
No meterlos hasta el fondo.

Machine the scale and the bed to a diameter of 6H7 at the same time.
Mount the two dowel pins at both ends of the scale.
Do not insert them all the way.



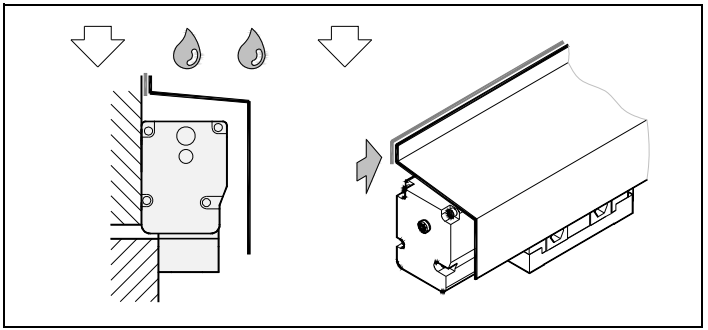
Quitar los dos tornillos que trae la regla a ambos lados.
Terminar de introducir los dos pasadores.

Remove the two screws of the scale at both ends.
Finish inserting the two dowel pins.



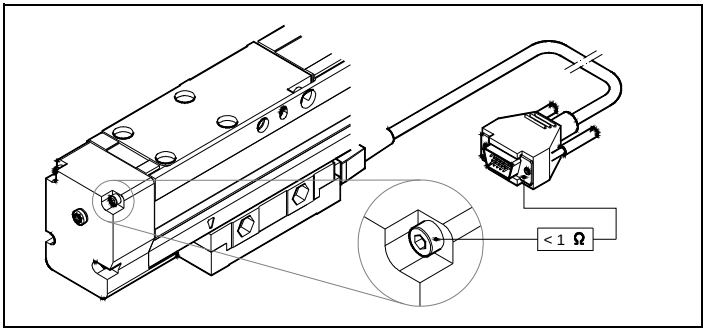
Montar los tornillos en los dos extremos.
Quitar los soportes de la cabeza.

Mount the screws at both ends.
Remove the reader head supports.



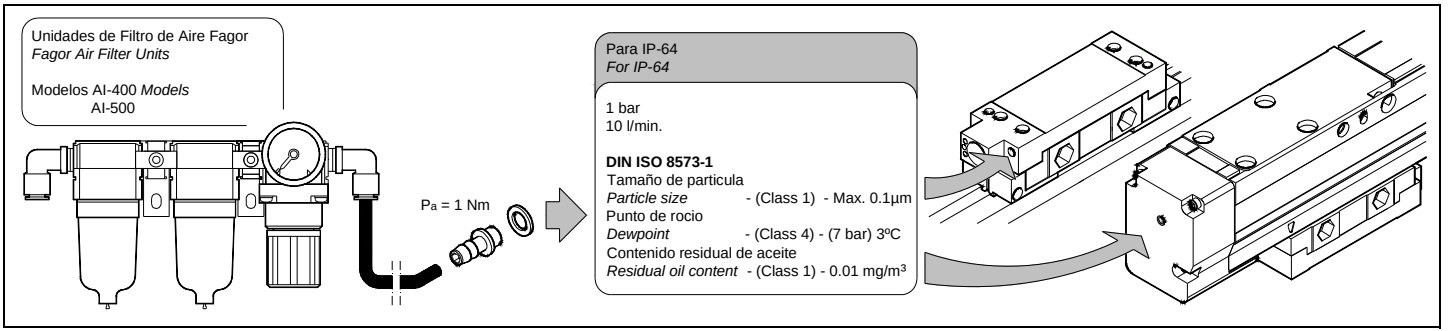
En ambientes muy contaminantes conviene proteger la regla.
Utilizar juntas de estanqueidad para evitar filtraciones.

In very polluted environments, the scale should be protected.
Use seals to prevent filtration.



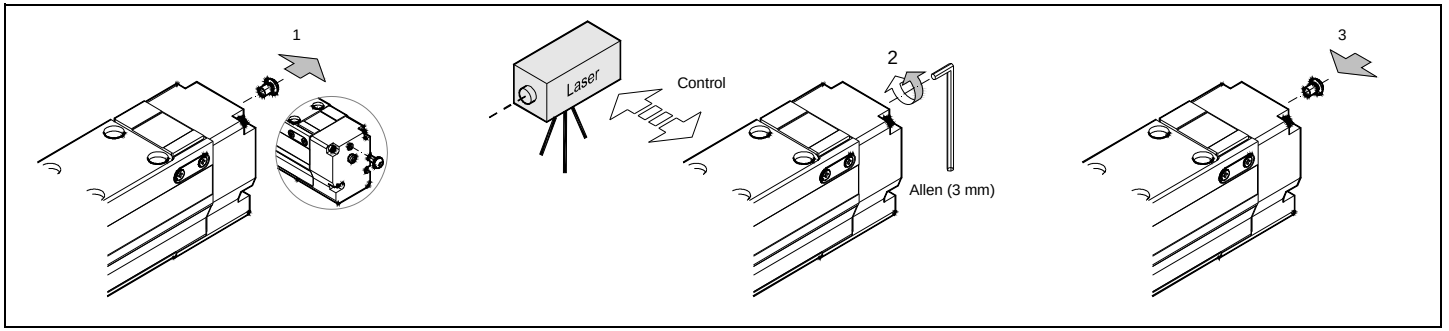
Realizar una comprobación de la correcta deriva a tierra de la regla.

Check for proper scale grounding.


Unidades de Filtro de Aire Fagor
Fagor Air Filter Units
Modelos AI-400 *Models*
AI-500
Pa = 1 Nm
Para IP-64
For IP-64
1 bar
10 l/min.
DIN ISO 8573-1
Tamaño de particula
Particle size - (Class 1) - Max. 0.1µm
Punto de rocio
Dewpoint - (Class 4) - (7 bar) 3ºC
Contenido residual de aceite
Residual oil content - (Class 1) - 0.01 mg/m3

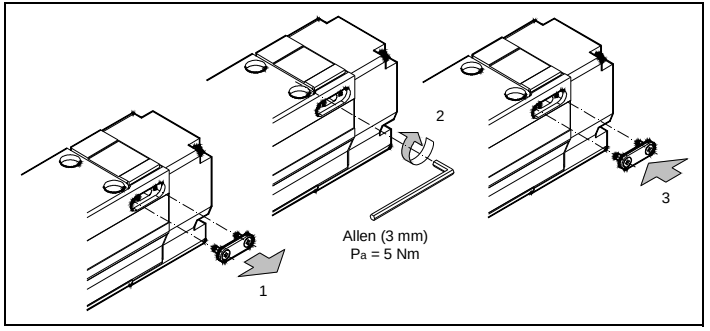
Existe la posibilidad de presurizar la cabeza lectora y la regla para minimizar la entrada de contaminación desde el exterior.
Fagor suministra unidades de aire expecíficas a tal efecto.

There is a possibility to pressurize the reader head and the scale to minimize contamination from the outside.
Fagor supplies the air units for that.



La regla viene calibrada.
De todas formas, Fagor recomienda compensar mediante un Interferómetro Laser los posibles errores causados durante el montaje de la regla.

The scale is already calibrated.
However, Fagor recommends to use a Laser Interferometer to compensate for possible errors originated while installing the scale.



Tras calibrar la regla, bloquear el tensor.

After calibrating the scale, lock the tensor..

FAGOR AUTOMATION S. COOP.

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Fagor Automation S. Coop.

ENCODER LINEAL MODELO: L MODULAR
LINEAR ENCODER MODEL: L MODULAR

MANUAL DE INSTALACION
INSTALLATION MANUAL

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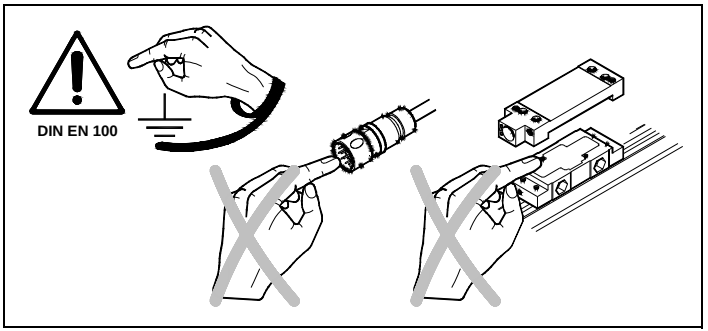
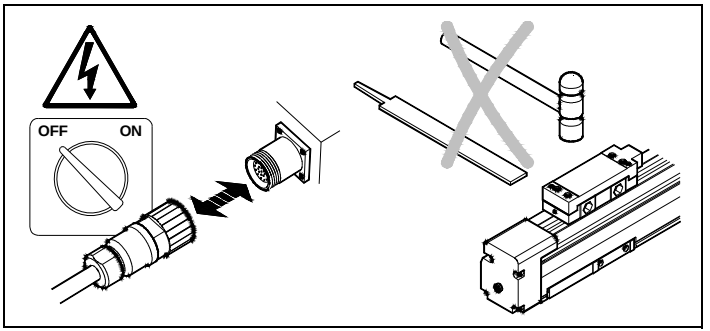
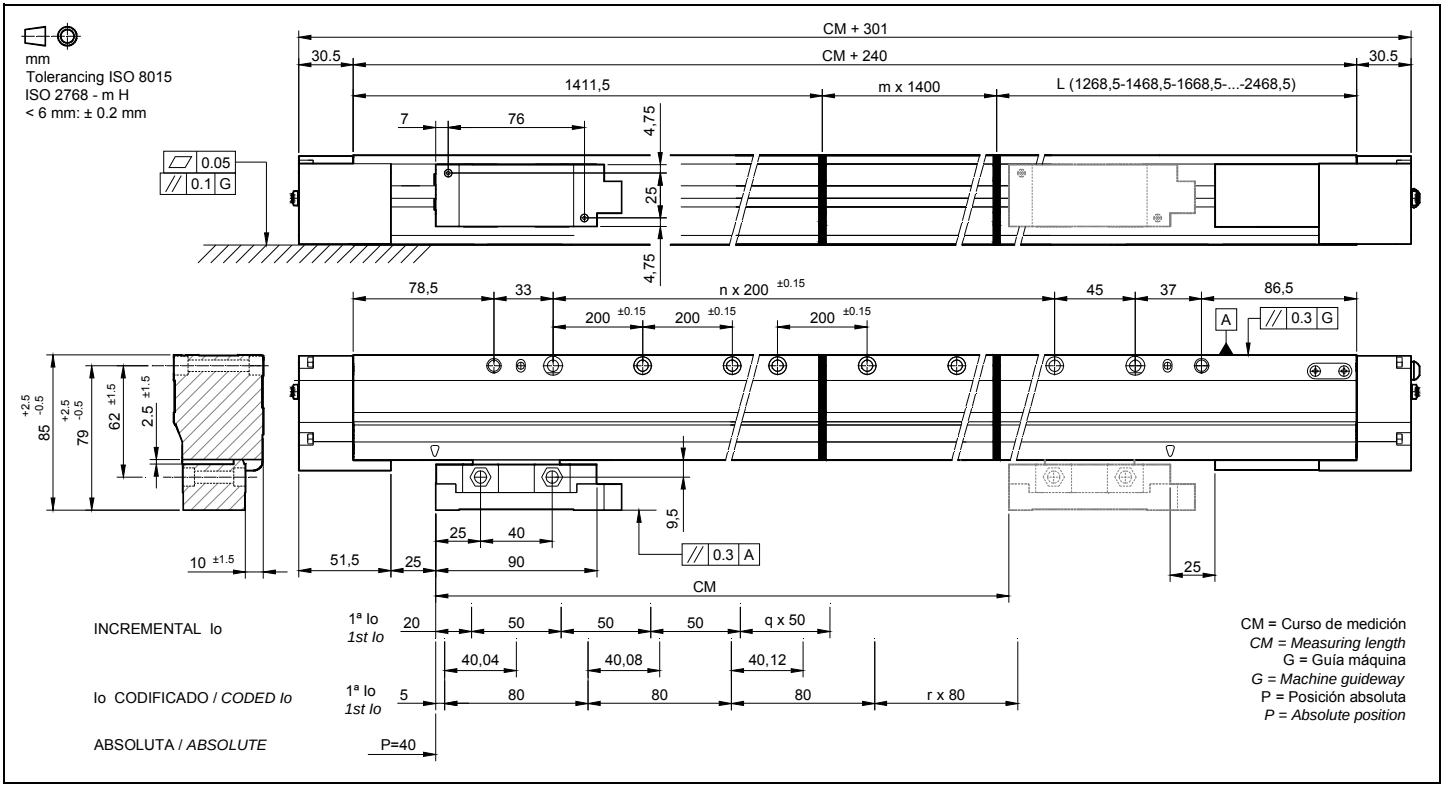
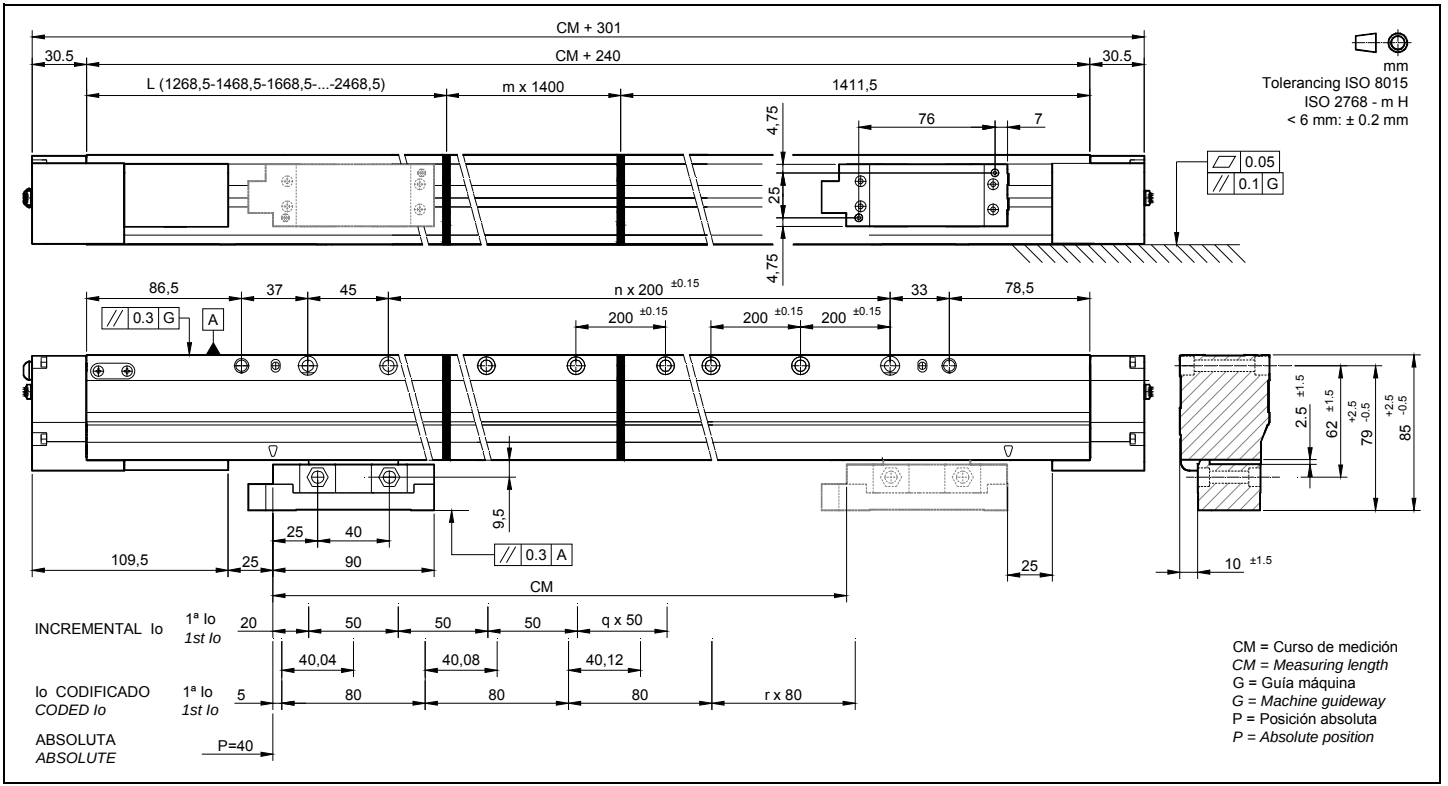






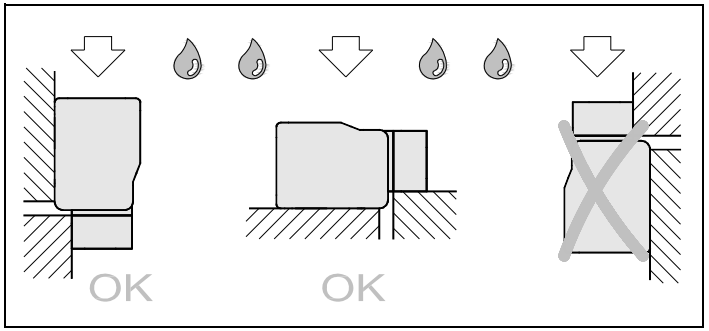
MODELO ESTANDAR.

STANDARD MODEL.



MODELO ESPEJO.

MIRROR MODEL.



Montar con los labios de estanqueidad no orientados a posibles fuentes de contaminación.

Mount it with the sealing lips facing away from contaminating elements.

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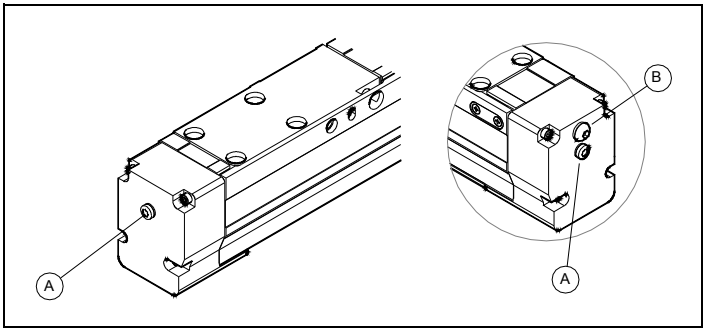

A: Entradas de aire.
B: Tensor del fleje.

A: Air intakes.
B: Tape tensor.

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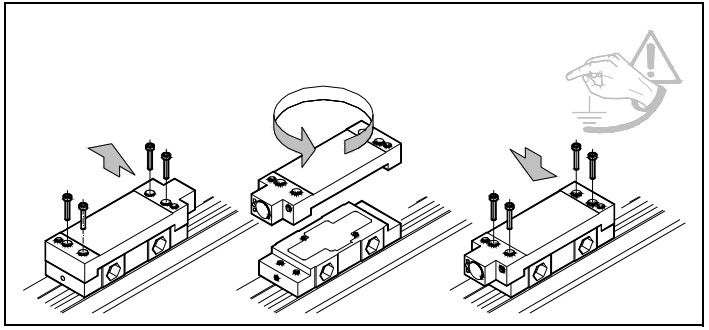
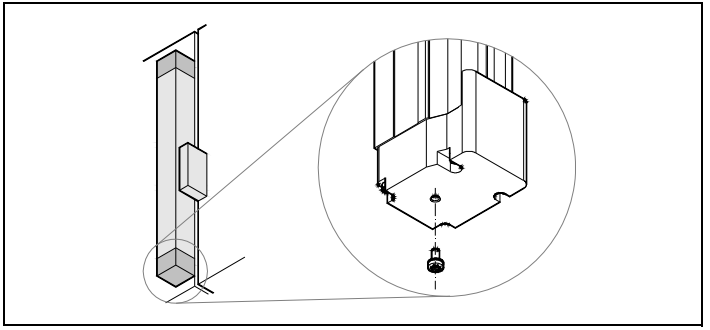


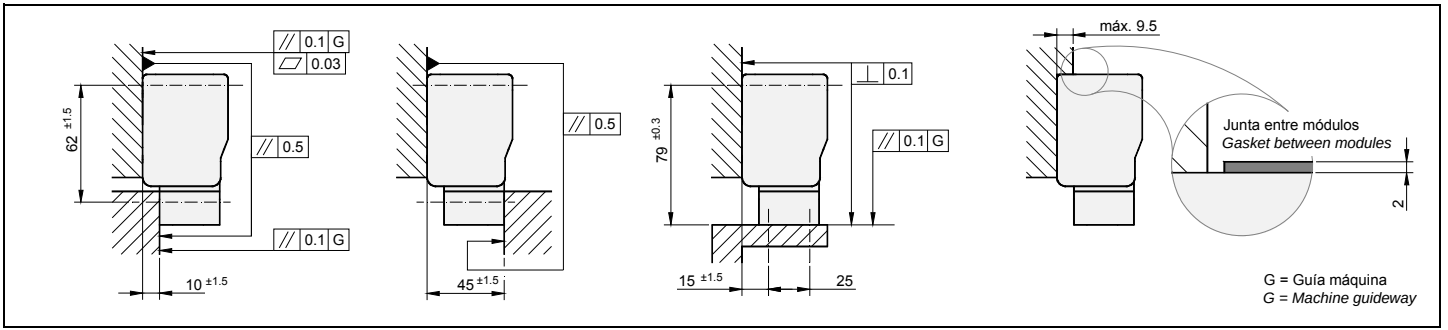
Es posible orientar la salida del conector a ambos lados.

The connector exit may be oriented at both ends.



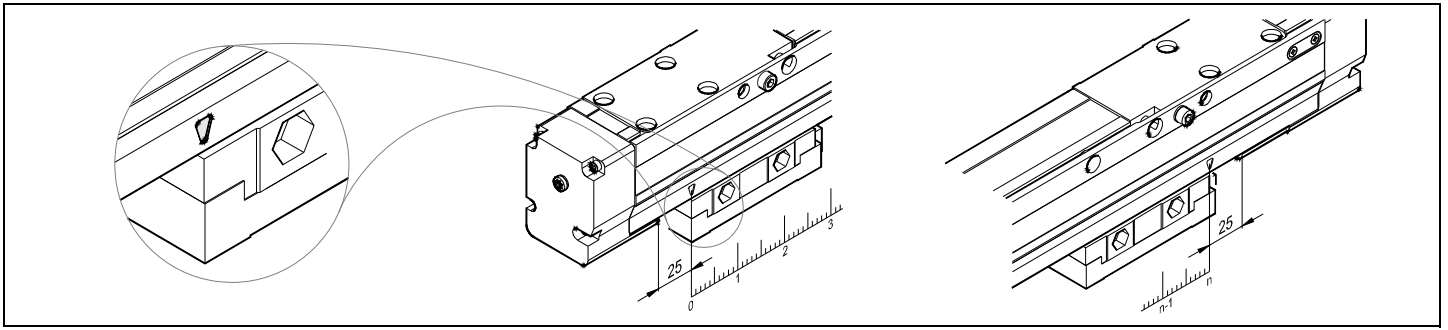
Si se monta la regla verticalmente y no se instala ningún equipo de aire, conviene quitar el tornillo de entrada de aire inferior.

When mounting the scale vertically and no air filter is installed, remove the bottom air intake screw.



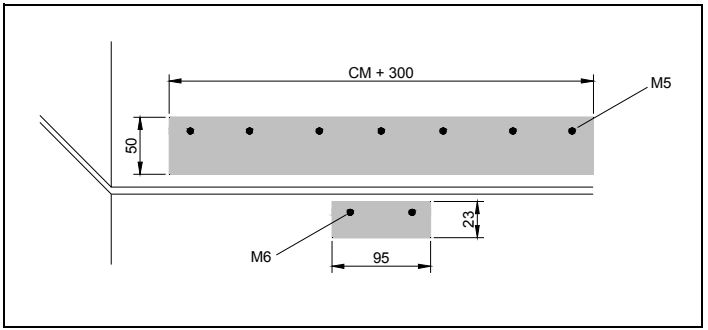
Posibilidades de montaje y tolerancias.

Mounting possibilities and tolerances.



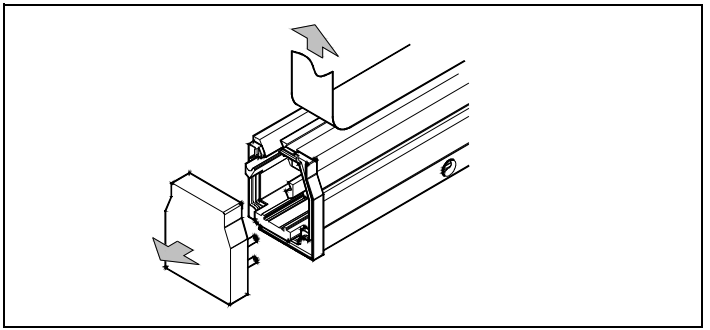
Las marcas triangulares de la regla definen el inicio y el final del curso de medición.

The triangle marks of the scale indicate the beginning and end of the measuring length.



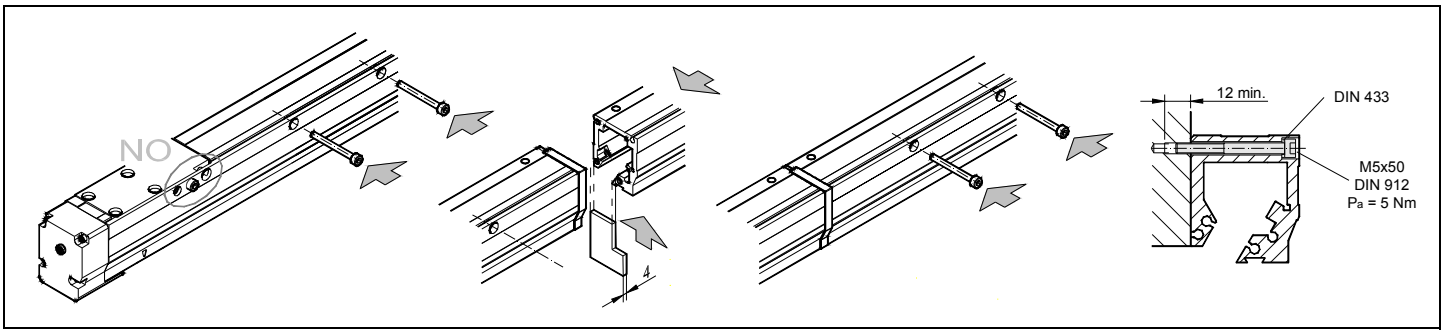
Realizar los agujeros para amarrar la regla.
Los agujeros de los pasadores se realizarám más tarde.
El área marcada estará libre de pintura.

Make the holes to secure the scale.
The holes for the dowel pins will be made later.
The marked area must be free of paint.



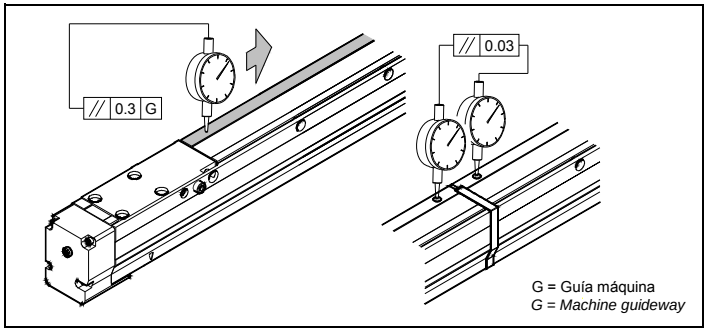
Quitar las tapas y la cinta protectora de los módulos.

Remove the end caps and the protective tape of the modules.



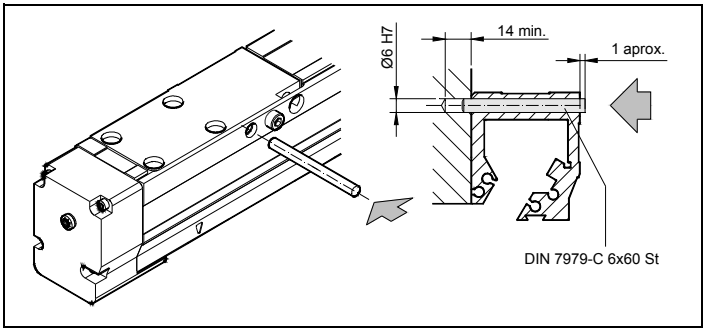
Montar los módulos de la regla y alinearlos.
Utilizar el calzo separador de 4 mm entre módulos.
Montar todos los tornillos excepto en los extremos de la regla (ver figura).

Mount the scale modules and lign them up.
Use the 4 mm separator wedge between modules..
Mount all the screws except at both ends of the scale (see drawing).



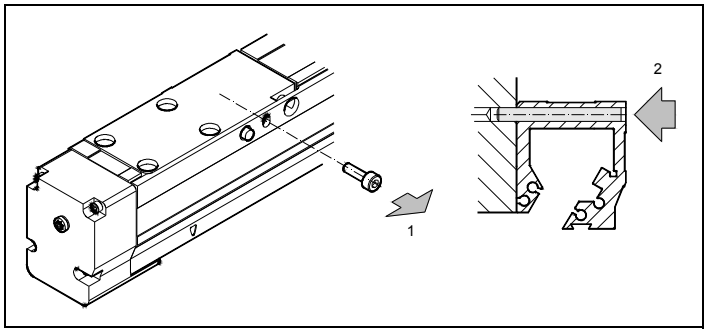
La figura muestra la zona en la que se ha de palpar con el reloj.

The drawing shows the area to be dial indicated.



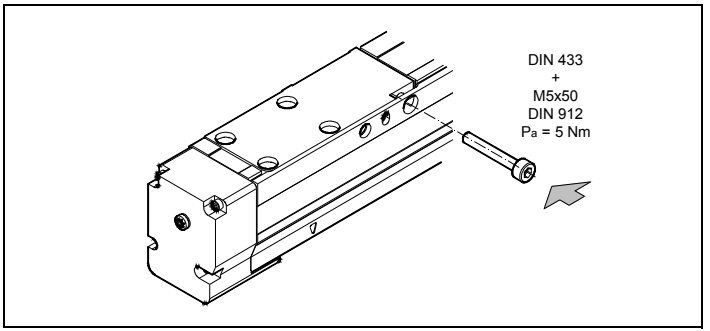
Mecanizar a l a vez l a regla y l a b ancada a diámetro 6H7.
Montar los dos pasadores a ambos lados de la regla.
No meterlos hasta el fondo.

Machine the scale and the bed to a diameter of 6H7 at the same time.
Mount the two dowel pins at both ends of the scale.
Do not insert them all the way.



Quitar los dos tornillos que trae la regla a ambos lados.
Terminar de introducir los pasadores.

Remove the two screws that the scale has on both sides.
Finish inserting the dowel pins.



Montar los tornillos en los dos extremos.

Mount the screws at both ends.
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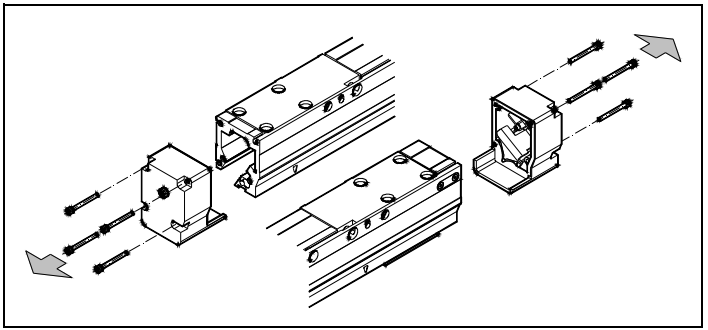
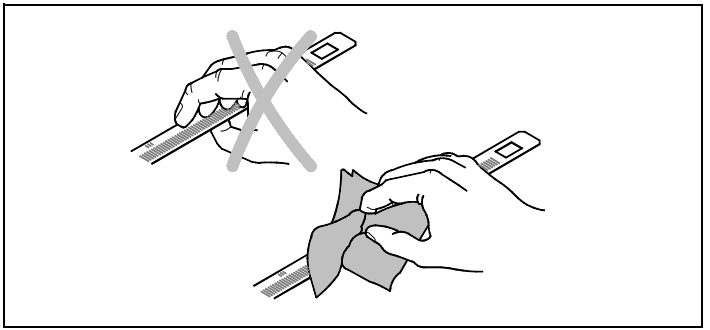
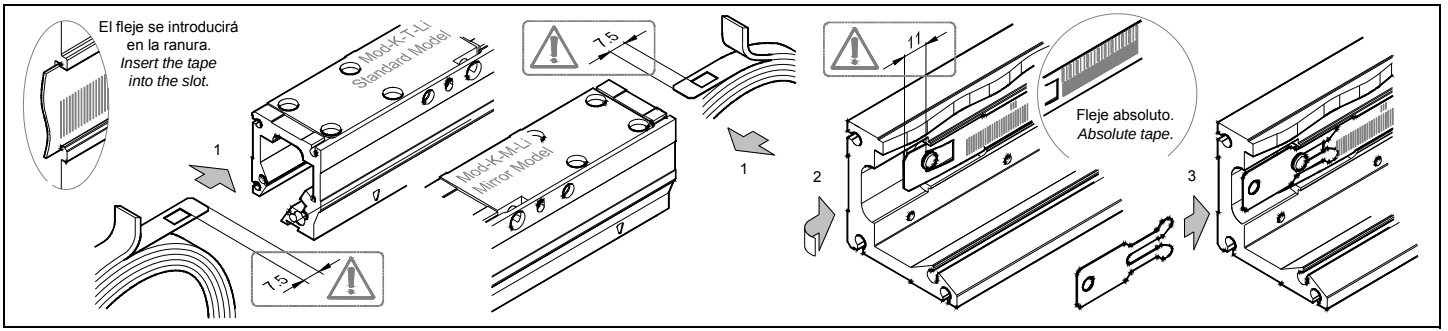


Quitar las tapas. *Remove the end caps.*

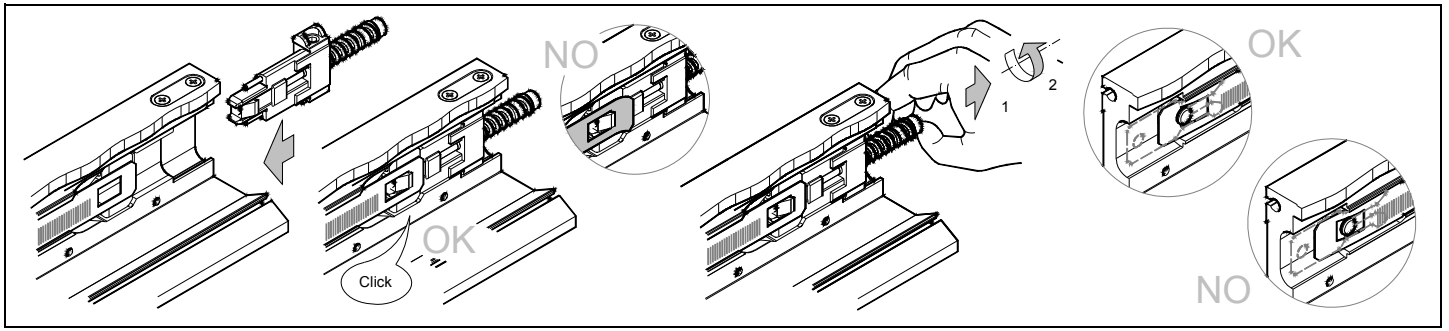


Preparar el fleje. *Prepare the tape.*
No tocar la parte grabada. *Do not touch the engraved side.*



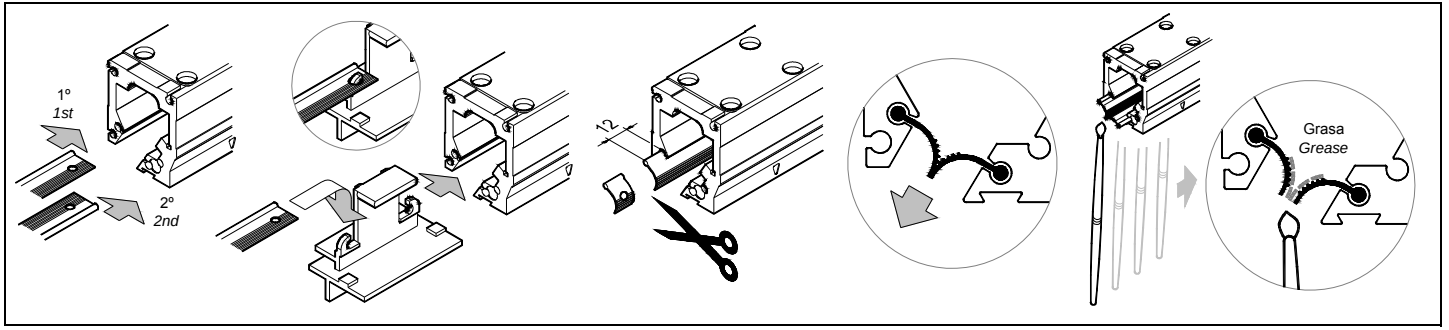
En los modelos estandar introducir el fleje LO-OOO en la regla desde el módulo Mod-K-T-Li.
En los modelos espejo introducir el fleje LO-OOO-M en la regla desde el módulo Mod-K-M-Li.

In standard models insert the LO-OOO tape from the Mod-K-T-Li module.
In mirror models insert the LO-OOO-M tape from the Mod-K-M-Li module.



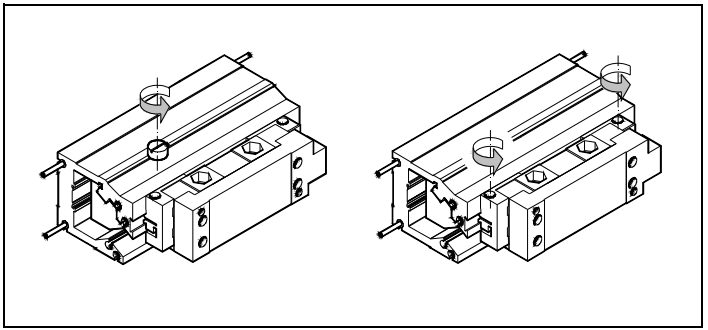
Meter el tensor y enganchar el fleje.
Tirar del tensor hacia afuera y pretensarlo manualmente mediante el tornillo hasta el tope.

Insert the tensor and engage the tape.
Pull at the tensor and tension it all the way by hand using the screw.



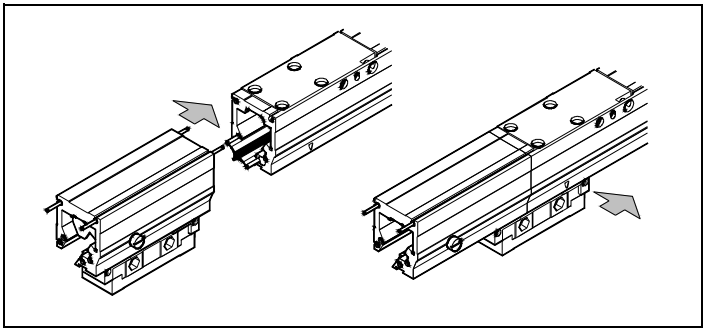
Introducir los labios uno a uno según el orden indicado.
Cortar los labios a la medida y levantarlos.
Engrasar los labios con la grasa suministrada.

Insert the lips one by one in the order shown .
Cut the lips to size and lift them up.
Lubricate the lips with the supplied grease.



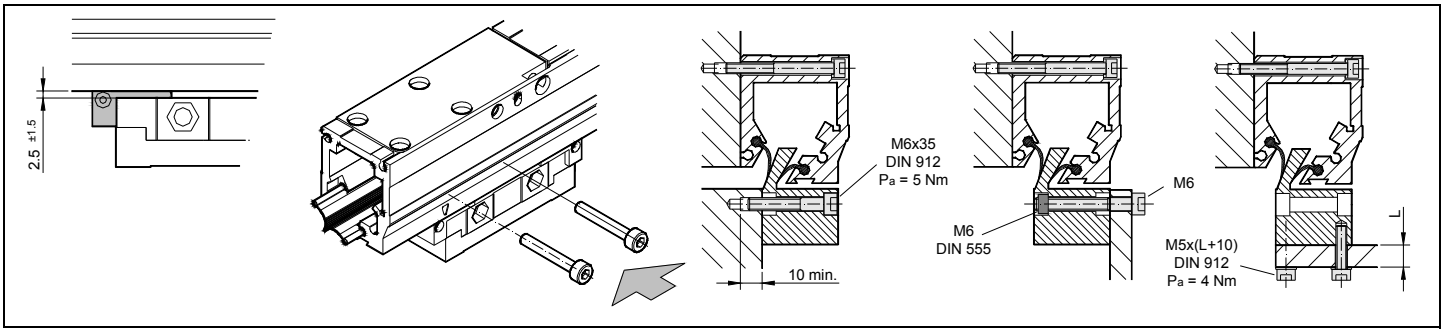
Aflojar los tornillos del embalaje de la cabeza.

Loosen the packing screws of the reader head.



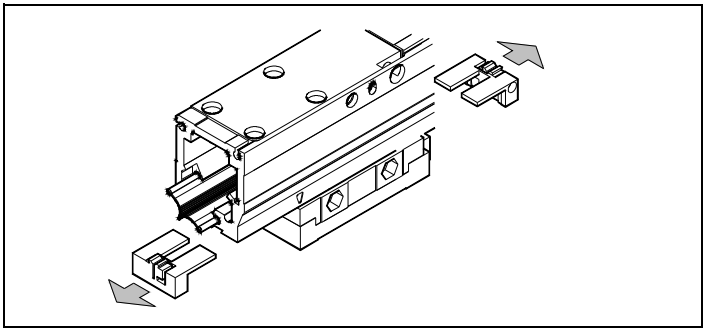
Introducir la cabeza por cualquiera de bs dos extremos de la regla.

Insert the reader head through any of the two ends of the scale.

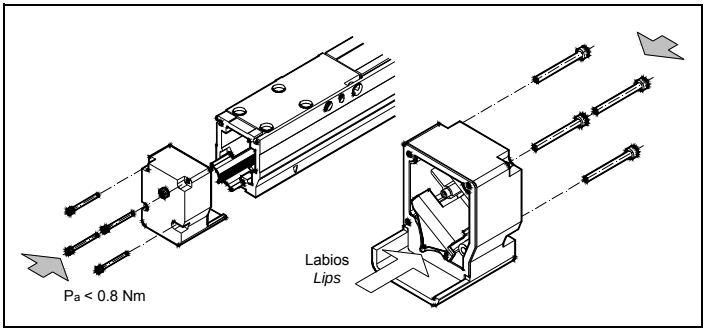


Fijar la cabeza lectora.
Los soportes fijan la distancia de separación (2.5 mm) entre la cabeza y la regla.

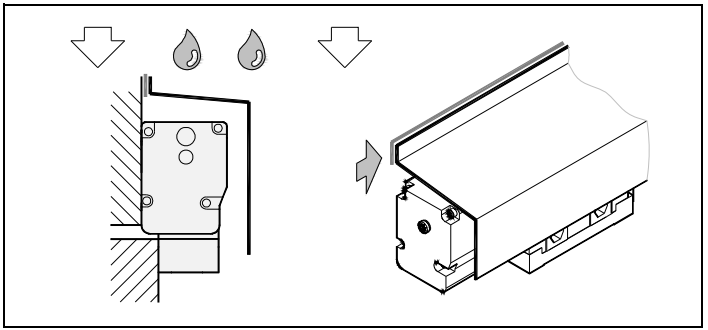
Secure the reader head.
The supports set the 2.5 mm gap between the reader head and the scale.



Quitar los soportes de la cabeza. *Remove the reader head supports.*

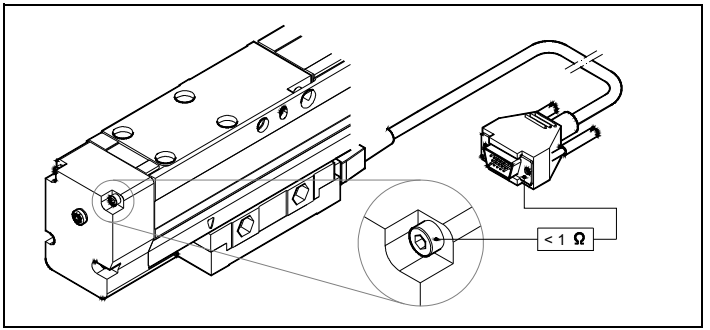


Poner las tapas. *Mount the end caps.*



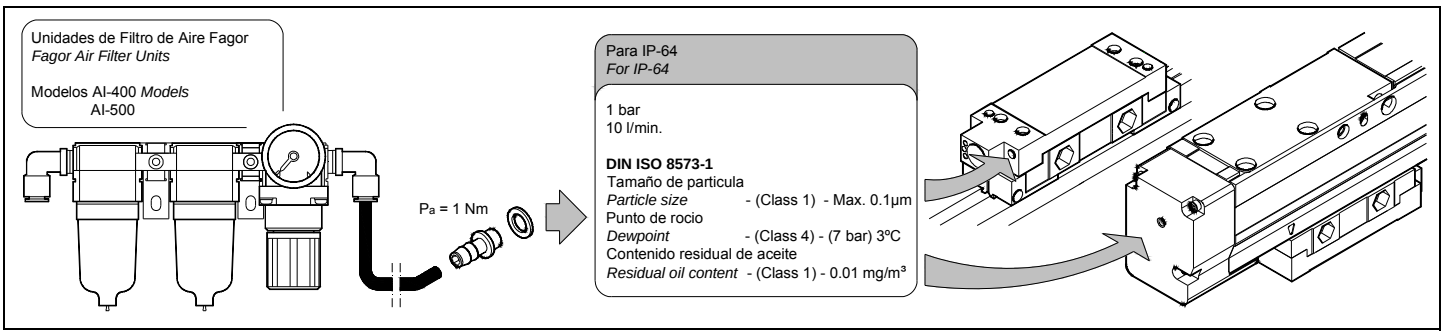
En ambientes muy contaminantes conviene proteger la regla.
Utilizar juntas de estanqueidad para evitar filtraciones.

In very polluted environments, the scale should be protected.
Use seals to prevent filtration.



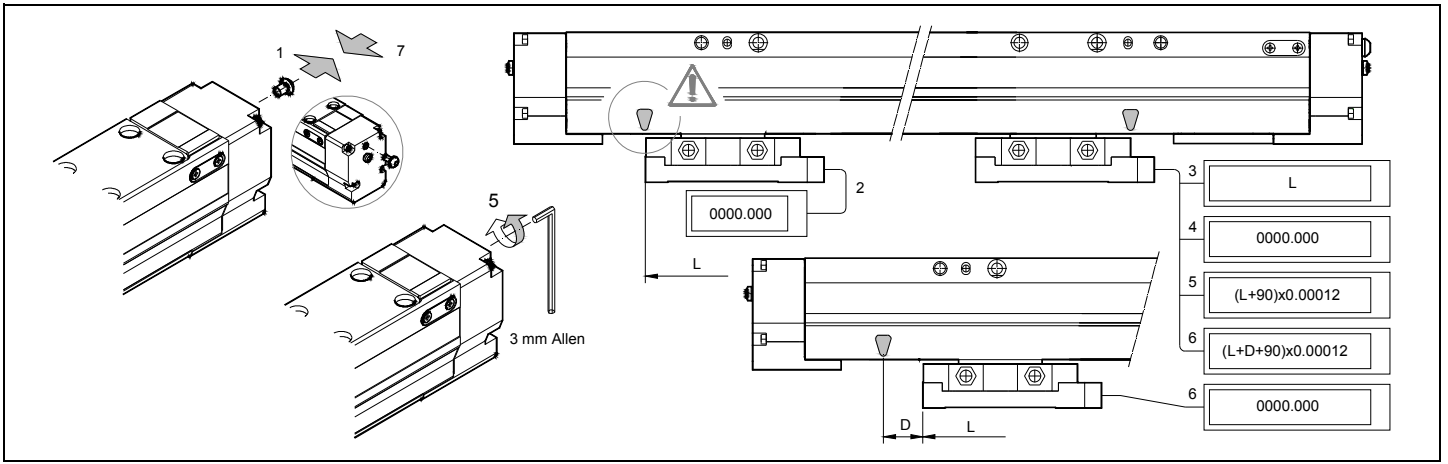
Realizar una comprobación de la correcta deriva a tierra de la regla.

Check for proper scale grounding.


Unidades de Filtro de Aire Fagor
Fagor Air Filter Units
Modelos AI-400 *Models*
AI-500
Pa = 1 Nm
Para IP-64
For IP-64
1 bar
10 l/min.
DIN ISO 8573-1
Tamaño de particula
Particle size - (Class 1) - Max. 0.1µm
Punto de rocio
Dewpoint - (Class 4) - (7 bar) 3ºC
Contenido residual de aceite
Residual oil content - (Class 1) - 0.01 mg/m³

Existe la posibilidad de presurizar la cabeza lectora y la regla para minimizar la entrada de contaminación desde el exterior.
Fagor suministra unidades de aire expecíficas a tal efecto.

There is a possibility to pressurize the reader head and the scale to minimize contamination from the outside.
Fagor supplies the air units for that.



Se debe ajustar el fleje con un interferómetro laser (recomendable) o bien manualmente.

Ajustar el fleje manualmente

1. Quitar el tapón que da acceso al tensor del fleje.
2. Situar la cabeza lectora en el extremo izquierdo aproximádamente y preseleccionar con el valor 0 el Visualizador.
3. Desplazar la cabeza lectora hacia el extremo derecho y anotar la lectura mostrada por el visualizador "L".
4. Preseleccionar en esta posición con el valor 0 el Visualizador.
5. Girar el tensor del fleje hasta que el visualizador muestre el valor obtenido mediante la formula: (L+90) x 0,00012.
6. Utilizar la fórmula (L+D+90) x 0,00012 si en el extremo izquierdo no hemos posicionado la cabeza en el triángulo.
7. Poner el tapón.

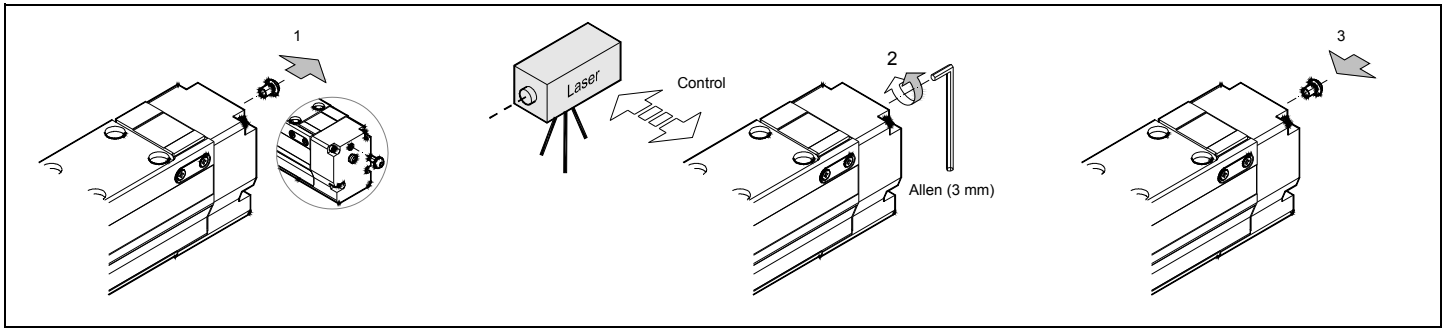
Nota: Tanto el valor de L, como el valor obtenido, se deben expresar en milímetros.

Use a Laser interferometer (recommended) to adjust the tape or do it manually.

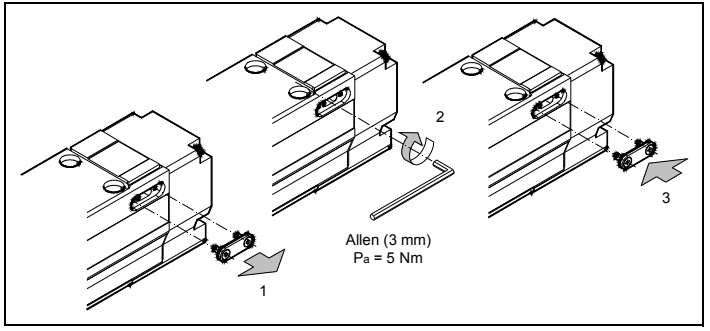
Adjusting the tape manually

1. Remove the cap to access the tape tensor.
2. Place the reader head approximately at the left end and preset the DRO to 0.
3. Slide the reader head towards the right end and write down the DRO reading "L".
4. Preset the DRO to 0 in this position.
5. Turn the tape tensor until the DRO displays the value obtained with the formula: (L+90) x 0,00012.
6. Use the formula (L+D+90) x 0.00012 if at the left end you have not positioned the reader head in the triangle.
7. Put the cap back on.

Note: Both the L value and the one obtained must be given in mm.



Ajustar el fleje mediante un Interferómetro Laser ***Adjust the tape with a Laser Interferometer.***



Tras calibrar la regla, bloquear el tensor. *After calibrating the scale, lock the tensor.*

FAGOR AUTOMATION S. COOP.

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Apdo de correos 144
20500 Arrasate/Mondragón
Spain

Web: www.fagorautomation.com
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Tel.: (34) 943 719200
Fax: (34) 943 791712

Fagor Automation S. Coop.

ENCODER LINEAL MODELO: L MODULAR EXTRA LARGA
LINEAR ENCODER MODEL: L MODULAR EXTRA LONG

MANUAL DE INSTALACION
INSTALLATION MANUAL

Manual Code: 14460138
Manual Version: 1201

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1	Contenidos
2 - 3	Dimensiones
4	Posibilidades de montaje
5	Tolerancias de montaje
6 - 15	Montaje

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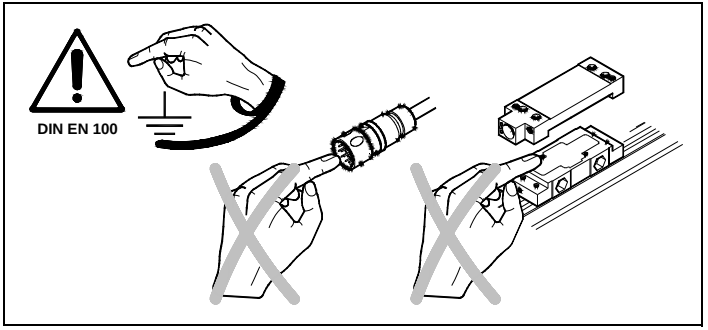
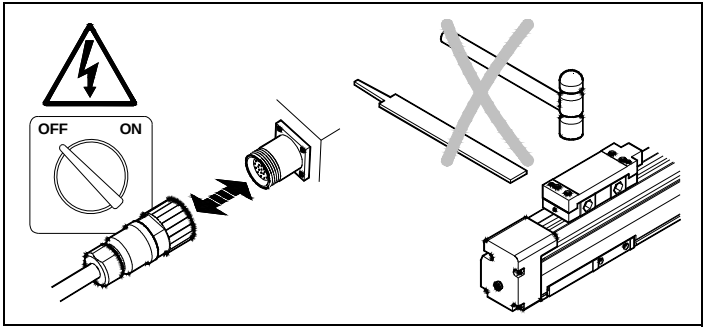
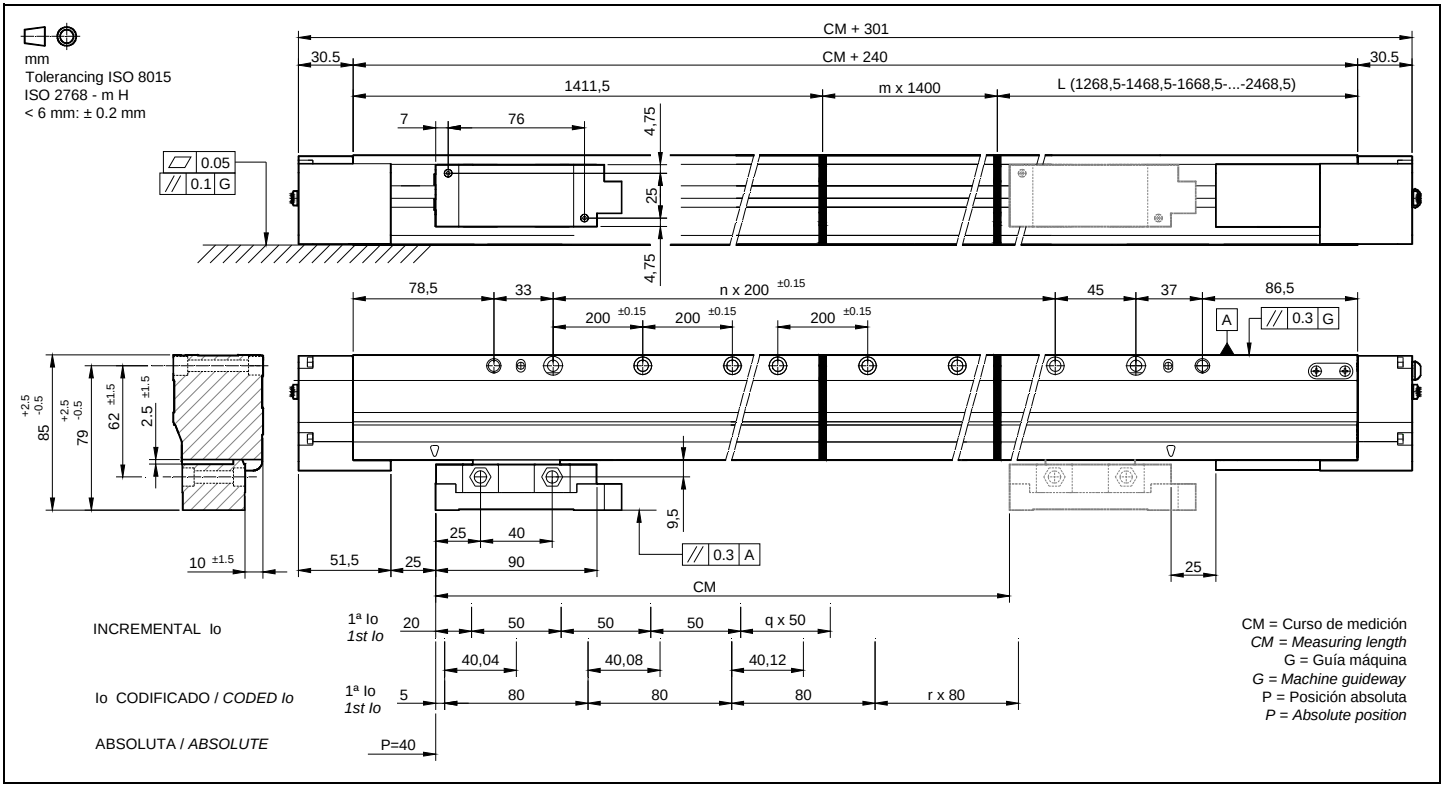
1	*Contents*
2 - 3	*Dimensions*
4	*Mounting possibilities*
5	*Mountig tolerances*
6 - 15	*Mounting*

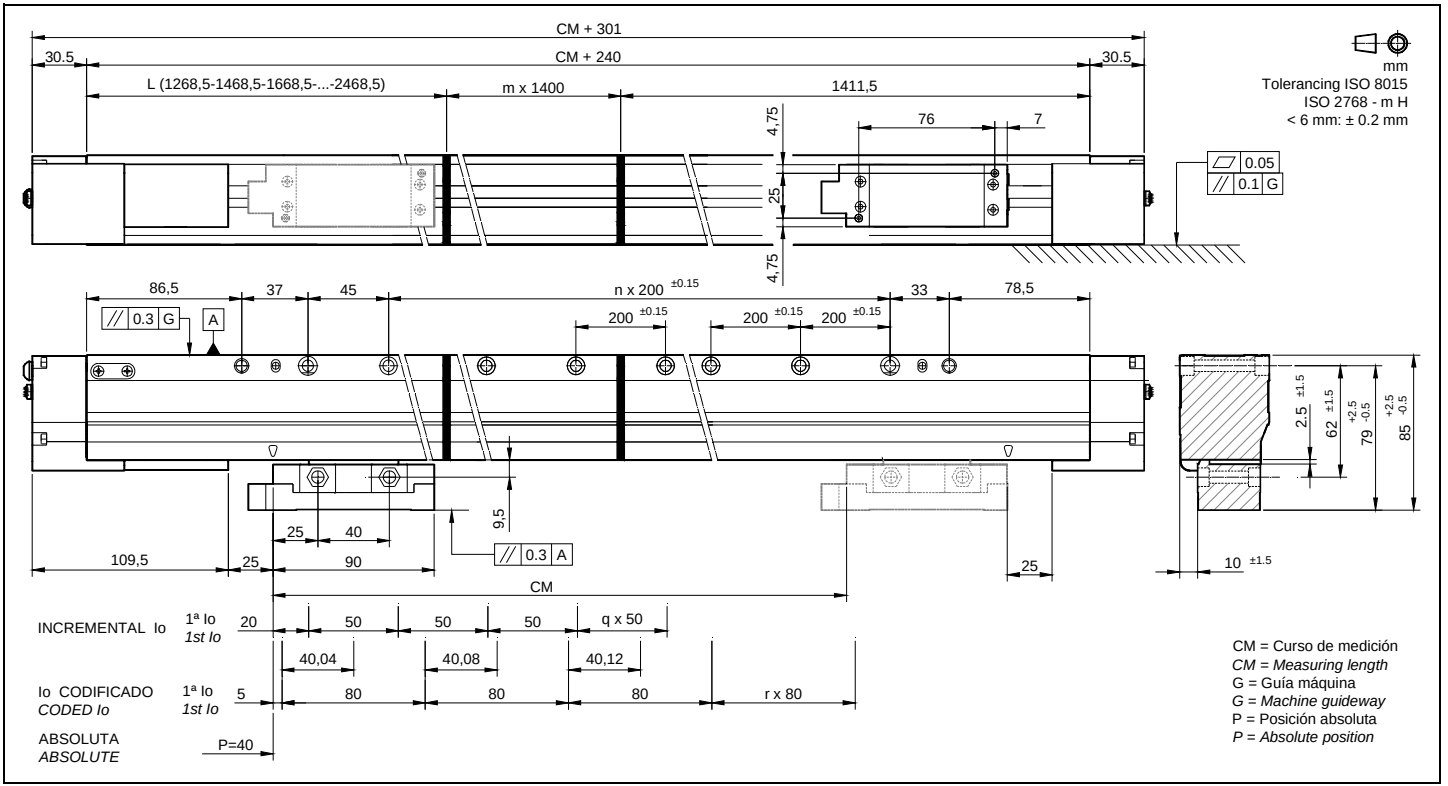






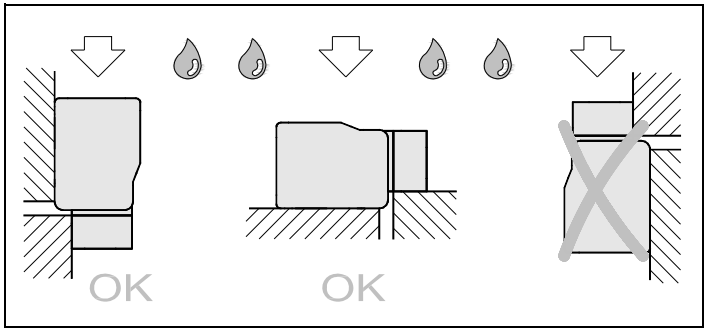
MODELO ESTANDAR.

STANDARD MODEL.



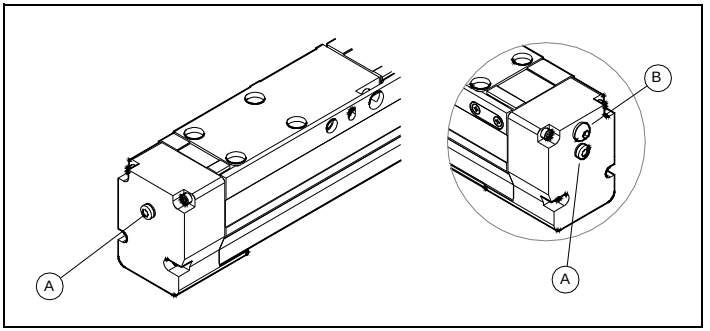
MODELO ESPEJO.

MIRROR MODEL.



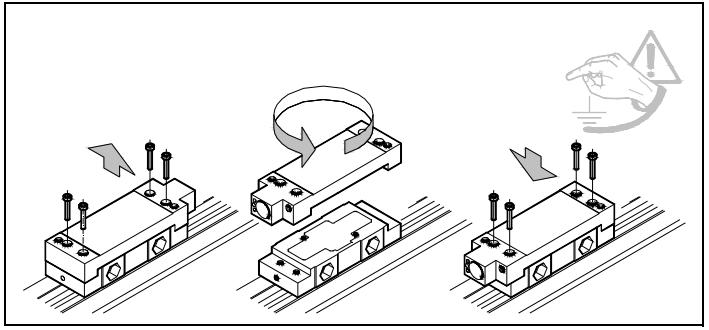
Montar con los labios de estanqueidad no orientados a posibles fuentes de contaminación.

Mount it with the sealing lips facing away from contaminating elements.



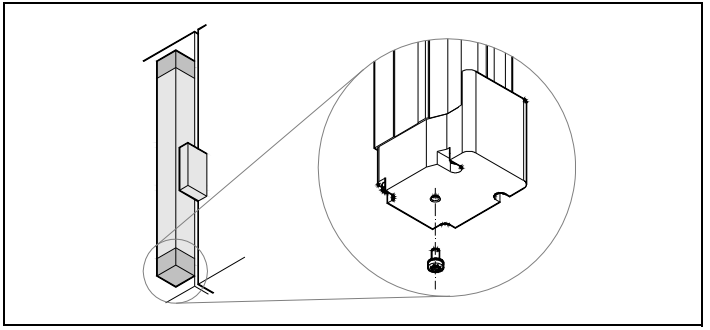
A: Entradas de aire.
B: Tensor del fleje.

A: Air intakes.
B: Tape tensor.



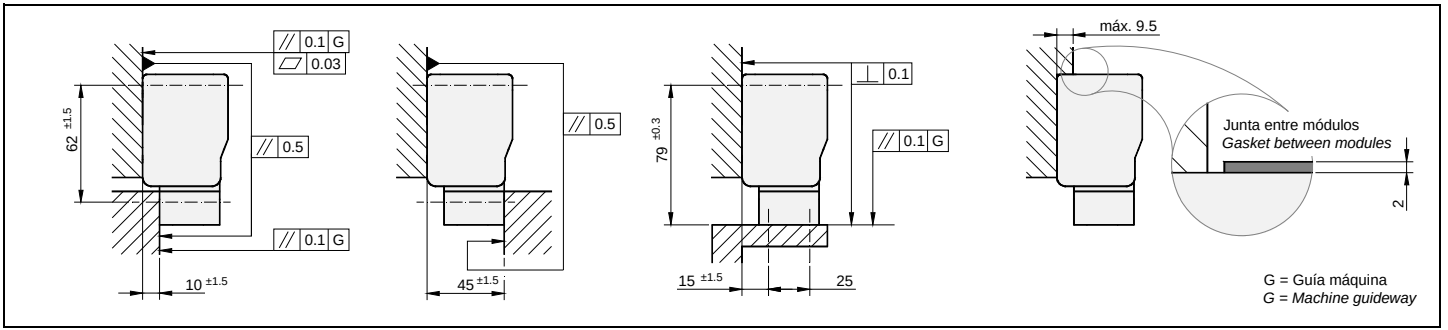
Es posible orientar la salida del conector a ambos lados.

The connector exit may be oriented at both ends.



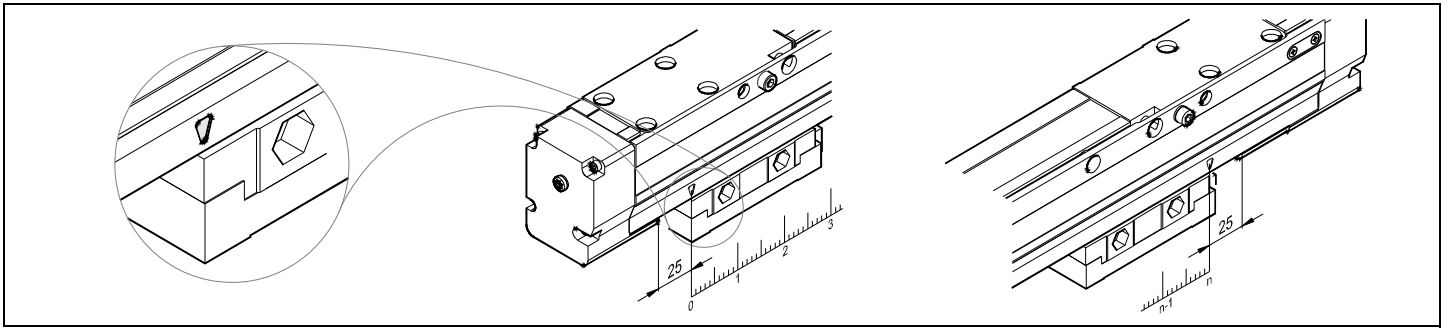
Si se monta la regla verticalmente y no se instala ningún equipo de aire, conviene quitar el tornillo de entrada de aire inferior.

When mounting the scale vertically and no air filter is installed, remove the bottom air intake screw.



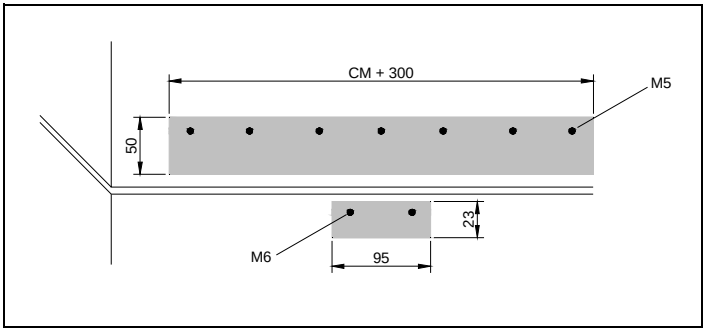
Posibilidades de montaje y tolerancias.

Mounting possibilities and tolerances.



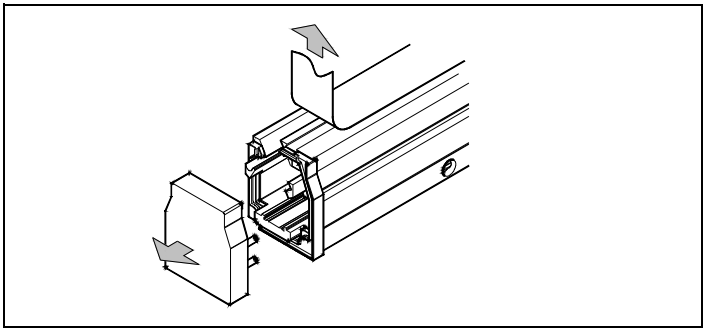
Las marcas triangulares de la regla definen el inicio y el final del curso de medición.

The triangle marks of the scale indicate the beginning and end of the measuring length.



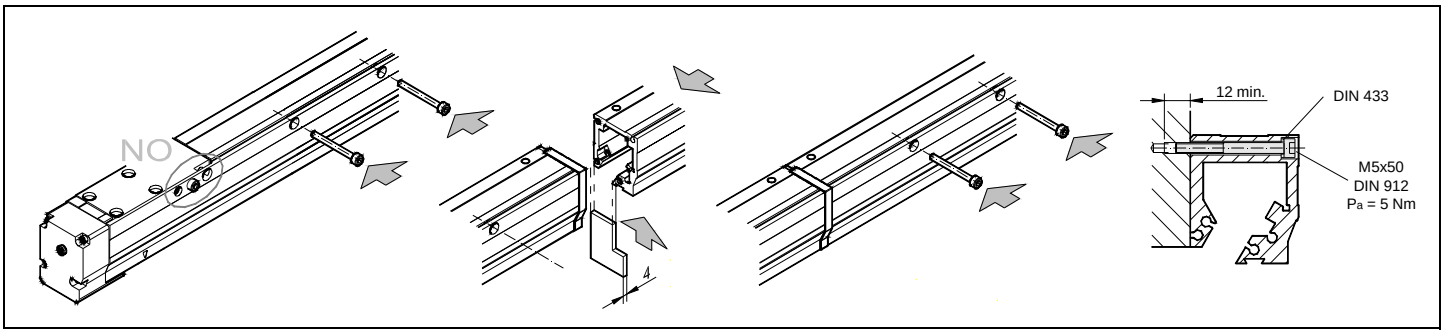
Realizar los agujeros para amarrar la regla.
Los agujeros de los pasadores se realizarám más tarde.
El área marcada estará libre de pintura.

Make the holes to secure the scale.
The holes for the dowel pins will be made later.
The marked area must be free of paint.



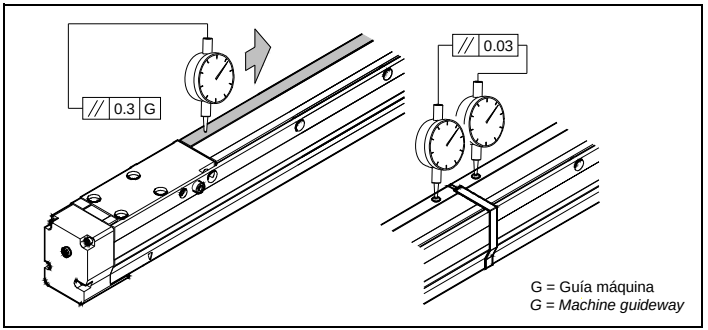
Quitar las tapas y la cinta protectora de los módulos.

Remove the end caps and the protective tape of the modules.



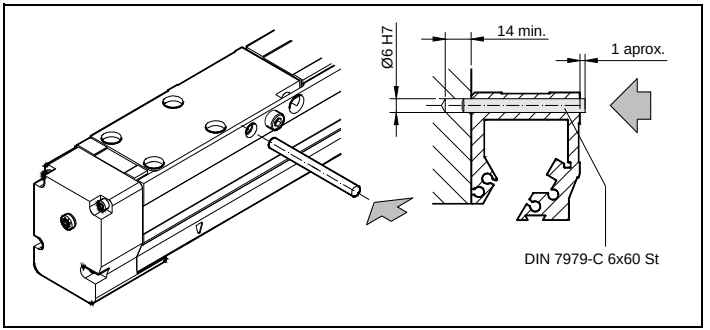
Montar los módulos de la regla y alinearlos.
Utilizar el calzo separador de 4 mm entre módulos.
Montar todos los tornillos excepto en los extremos de la regla (ver figura).

Mount the scale modules and lign them up.
Use the 4 mm separator wedge between modules.
Mount all the screws except at both ends of the scale (see drawing).



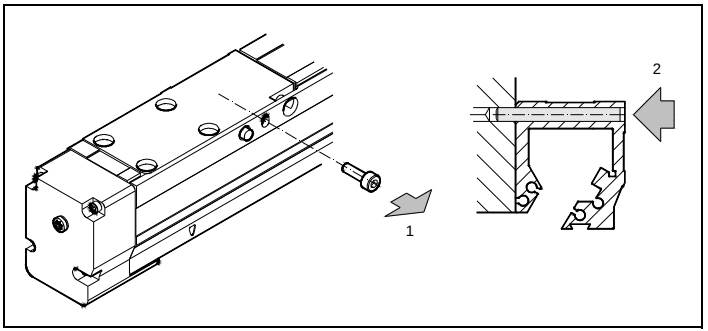
La figura muestra la zona en la que se ha de palpar con el reloj.

The drawing shows the area to be dial indicated



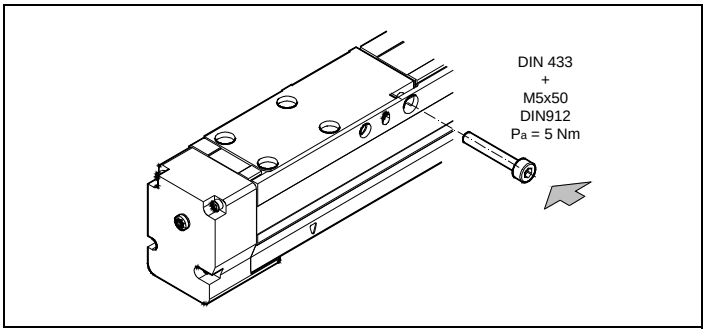
Mecanizar a la vez la regla y la bancada a diámetro 6H7.
Montar los dos pasadores a ambos lados de la regla.
No meterlos hasta el fondo.

Machine the scale and the bed to a diameter of 6H7 at the same time.
Mount the two dowel pins at both ends of the scale.
Do not insert them all the way.



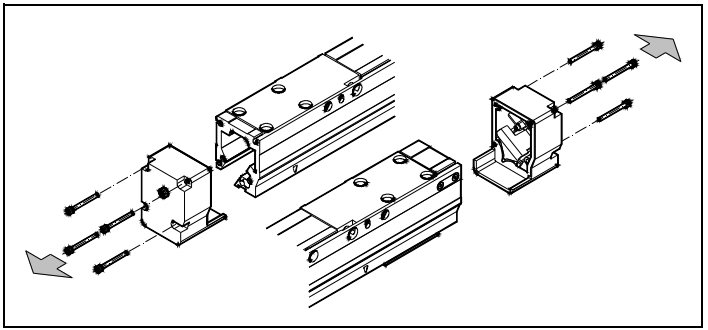
Quitar los dos tornillos que trae la regla a ambos lados.
Terminar de introducir los pasadores.

Remove the two screws of the scale at both ends.
Finish inserting the dowel pins.

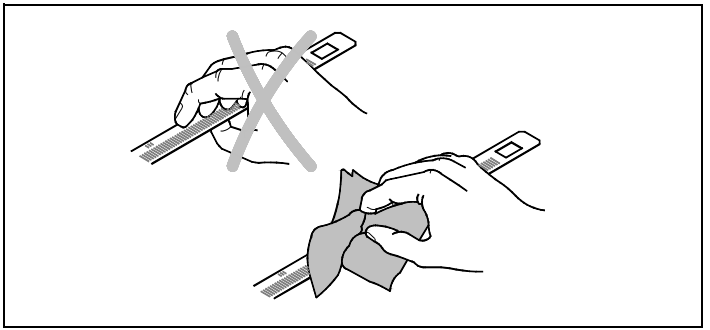


Montar los tornillos en los dos extremos.

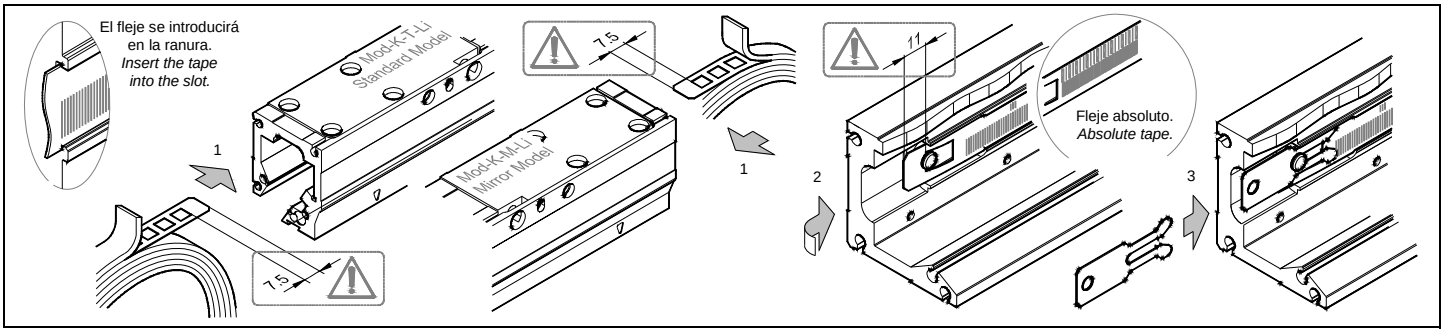
Mount the screws at both ends.



Quitar las tapas. *Remove the end caps.*

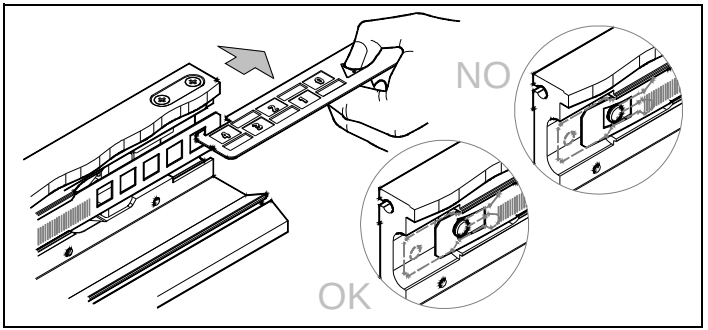


Preparar el fleje. *Prepare the tape.*
No tocar la parte grabada. *Do not touch the engraved side.*

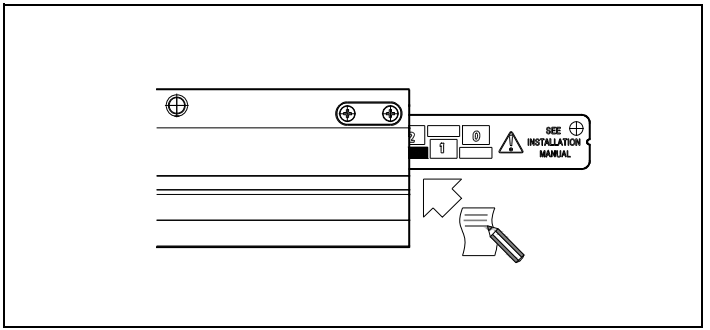


En los modelos estandar introducir el fleje LO-OOO en la regla desde el módulo Mod-K-T-Li.
En los modelos espejo introducir el fleje LO-OOO-M en la regla desde el módulo Mod-K-M-Li.

In standard models insert the LO-OOO tape from the Mod-K-T-Li module.
In mirror models insert the LO-OOO-M tape from the Mod-K-M-Li module.

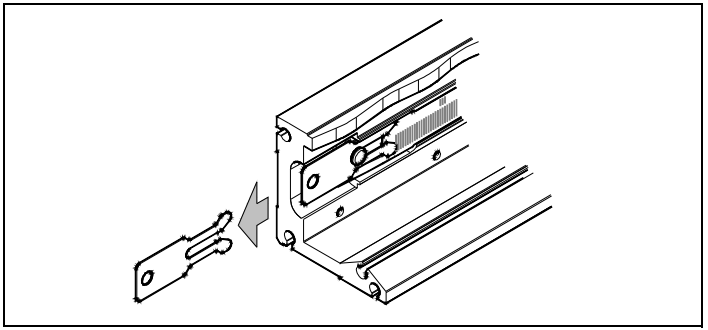


Estirar del fleje. *Pull at the tape..*

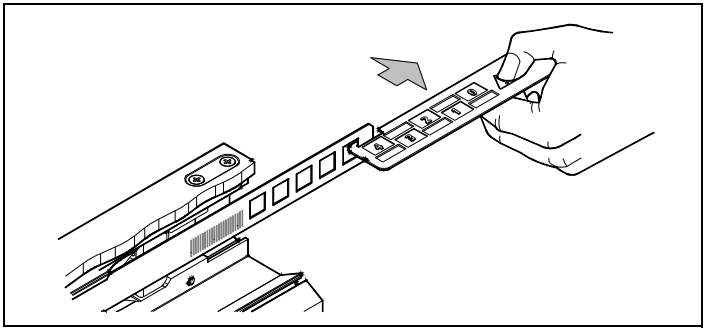


Anotar en que número de ventana está el extremo del perfil.
En el ejemplo de la figura: 2.

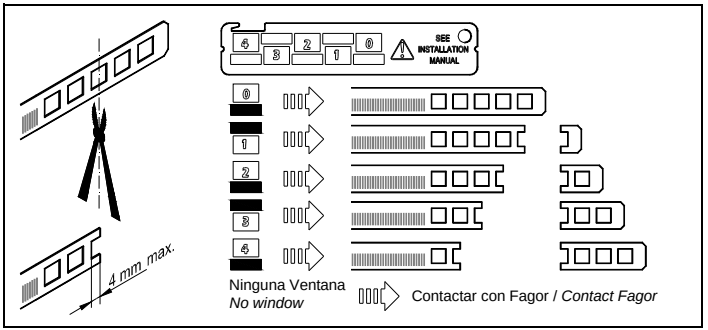
Write down the window number located at the end of the profile.
In the example of the drawing: 2.



Soltar el fleje. *Release the tape..*

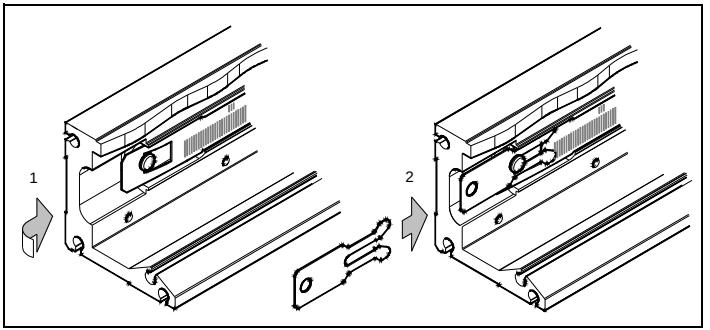


Sacar el extremo del fleje. *Pull out the end of the tape.*



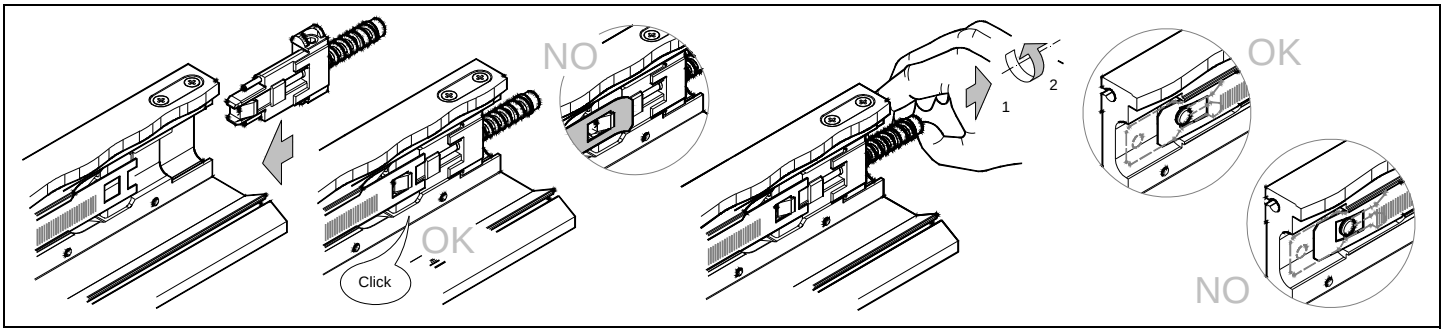
Cortar el fleje según el número de ventana anotado anteriomente.
Cortar con las tijeras suministradas.

Cut the tape according to the window number written down earlier.
Cut it with the scissors provided.



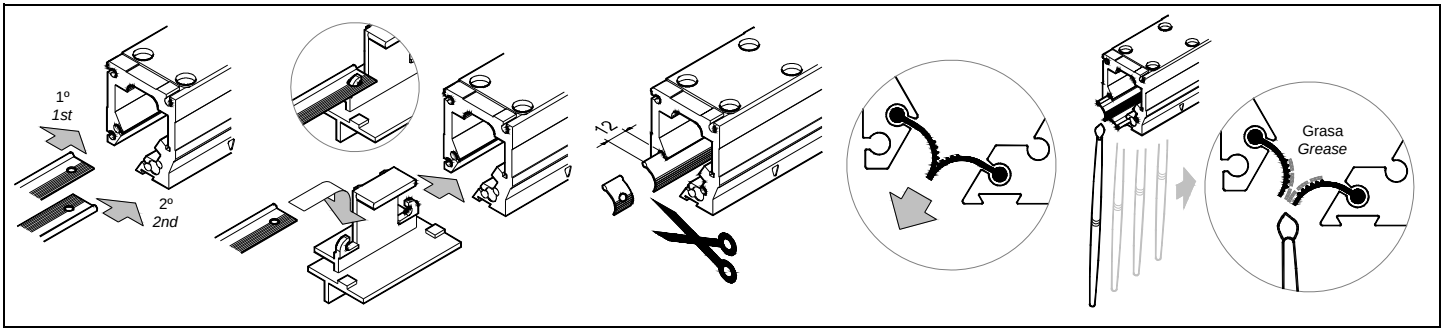
Sujetar el fleje.

Hold the tape.



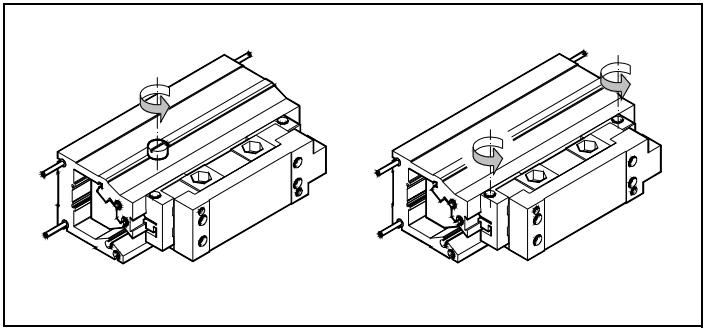
Meter el tensor y enganchar el fleje.
Tirar del tensor hacia afuera y pretensarlo manualmente mediante el tornillo hasta el tope.

Insert the tensor and engage the tape.
Pull at the tensor and tension it all the way by hand using the screw.



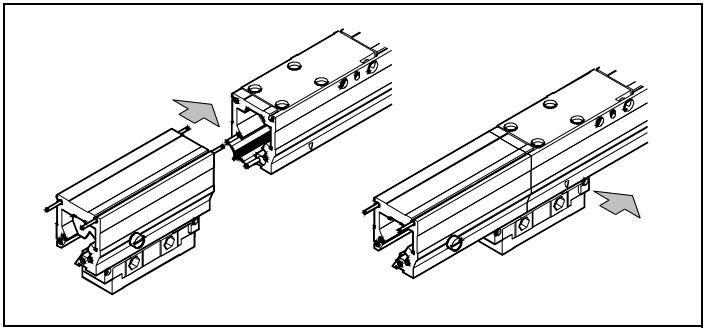
Introducir los labios uno a uno según el orden indicado.
Cortar los labios a la medida y levantarlos.
Engrasar los labios con la grasa suministrada.

Insert the lips one by one in the order shown.
Cut the lips to size and lift them up.
Lubricate the lips with the supplied grease.



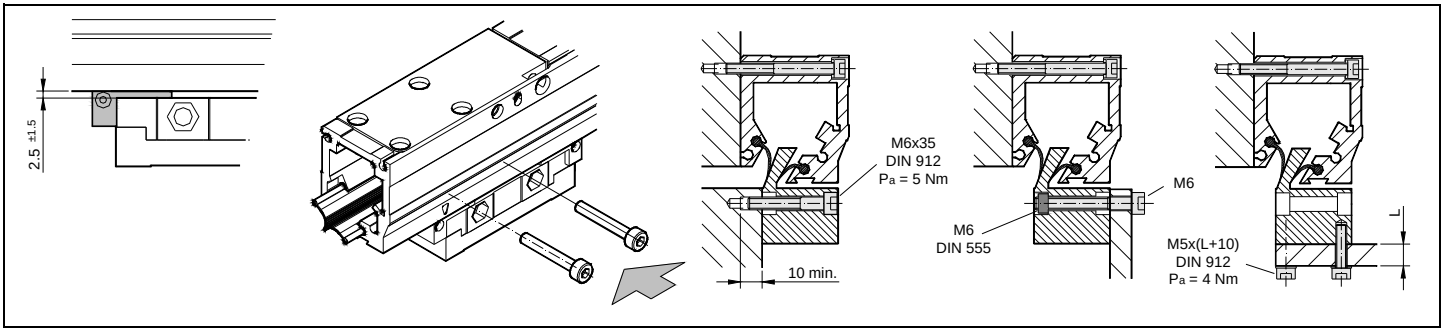
Aflojar los tornillos del embalaje de la cabeza.

Loosen the packing screws of the reader head.



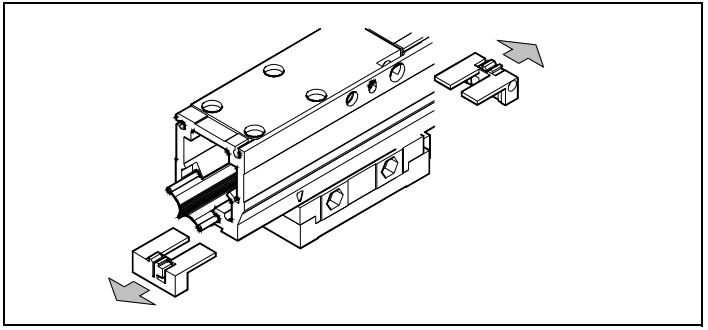
Introducir la cabeza por cualquiera de los dos extremos de la regla.

Insert the reader head through any of the two ends of the scale.

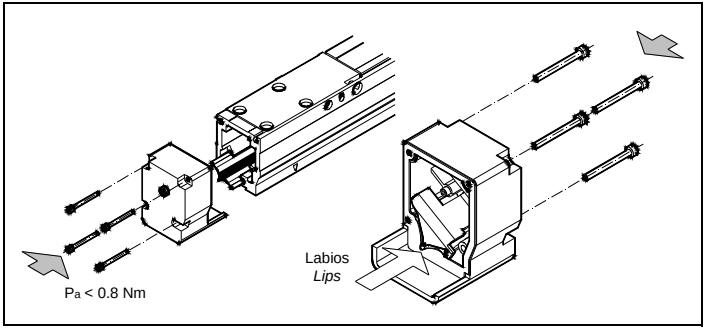


Fijar la cabeza lectora.
Los soportes fijan la distancia de separación (2.5 mm) entre la cabeza y la regla.

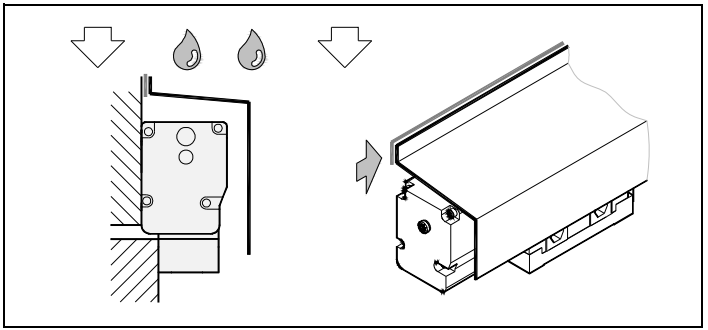
Secure the reader head.
The supports set the 2.5 mm gap between the reader head and the scale.



Quitar los soportes de la cabeza. *Remove the reader head supports.*

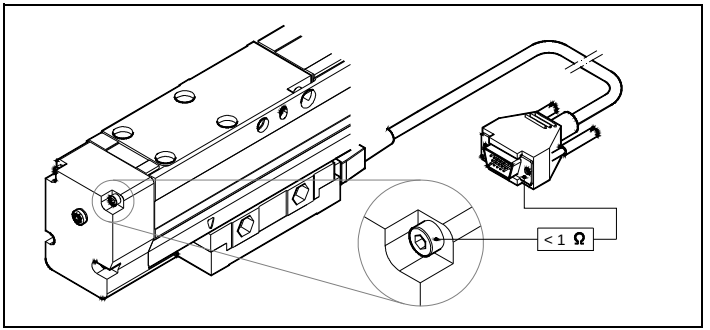


Poner las tapas. *Mount the end caps.*



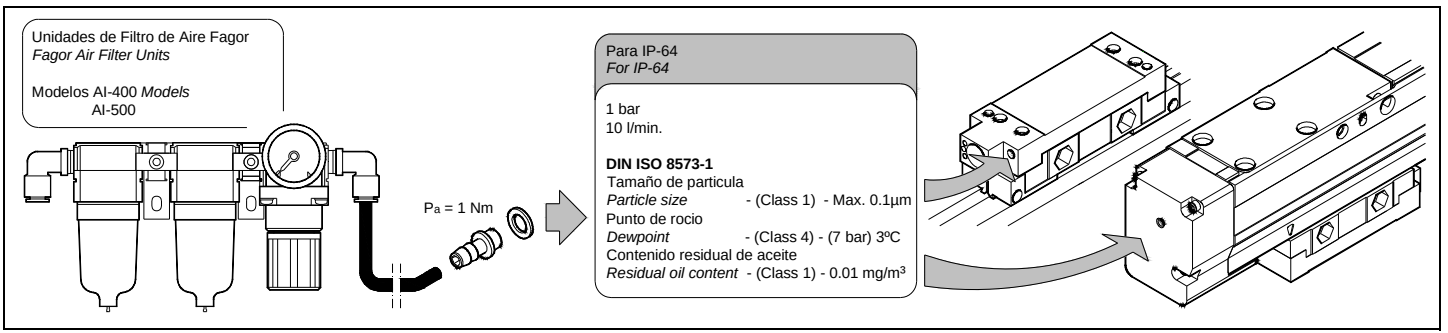
En ambientes muy contaminantes conviene proteger la regla.
Utilizar juntas de estanqueidad para evitar filtraciones.

In very polluted environments, the scale should be protected.
Use seals to prevent filtration.



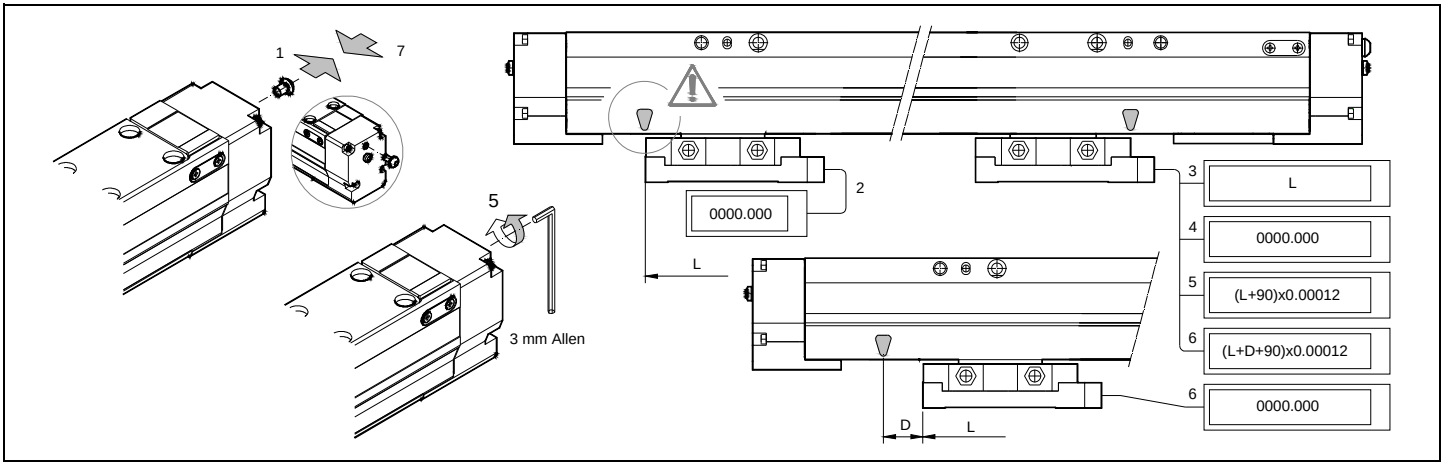
Realizar una comprobación de la correcta deriva a tierra de la regla.

Check for proper scale grounding.


Unidades de Filtro de Aire Fagor
Fagor Air Filter Units
Modelos AI-400 *Models*
AI-500
Pa = 1 Nm
Para IP-64
For IP-64
1 bar
10 l/min.
DIN ISO 8573-1
Tamaño de particula
Particle size - (Class 1) - Max. 0.1µm
Punto de rocio
Dewpoint - (Class 4) - (7 bar) 3ºC
Contenido residual de aceite
Residual oil content - (Class 1) - 0.01 mg/m3

Existe la posibilidad de presurizar la cabeza lectora y la regla para minimizar la entrada de contaminación desde el exterior.
Fagor suministra unidades de aire expecíficas a tal efecto.

There is a possibility to pressurize the reader head and the scale to minimize contamination from the outside.
Fagor supplies the air units for that.



Se debe ajustar el fleje con un Interferómetro Laser (recomendable) o bien manualmente.

Ajustar el fleje manualmente

1. Quitar el tapón que da acceso al tensor del fleje.
2. Situar la cabeza lectora en el extremo izquierdo aproximádamente y preseleccionar con el valor 0 el Visualizador.
3. Desplazar la cabeza lectora hacia el extremo derecho y anotar la lectura mostrada por el visualizador “L”.
4. Preseleccionar en esta posición con el valor 0 el Visualizador.
5. Girar el tensor del fleje hasta que el visualizador muestre el valor obtenido mediante la formula: (L+90) x 0,00012.
6. Utilizar la fórmula (L+D+90) x 0,00012 si en el extremo izquierdo no hemos posicionado la cabeza en el triángulo.
7. Poner el tapón.

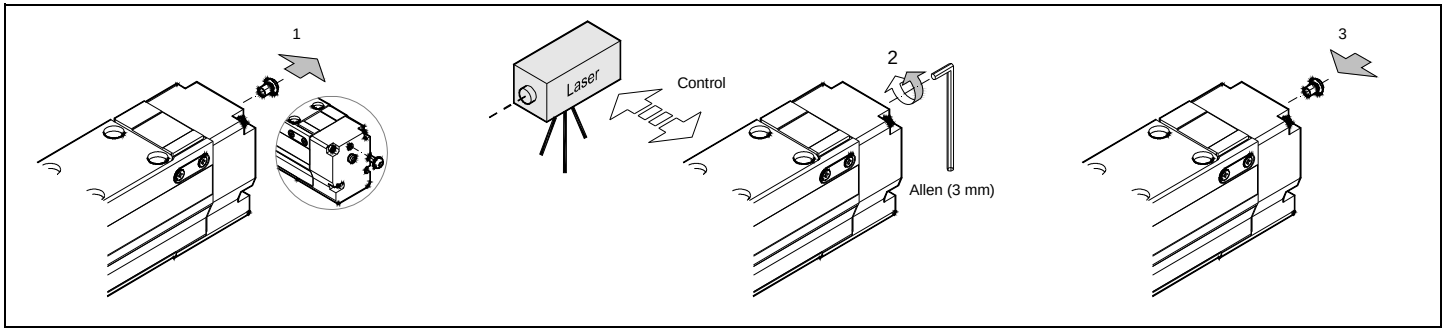
Nota: Tanto el valor de L, como el valor obtenido, se deben expresar en milímetros.

Use a Laser Interferometer (recommended) to adjust the tape or do it manually.

Adjusting the tape manually

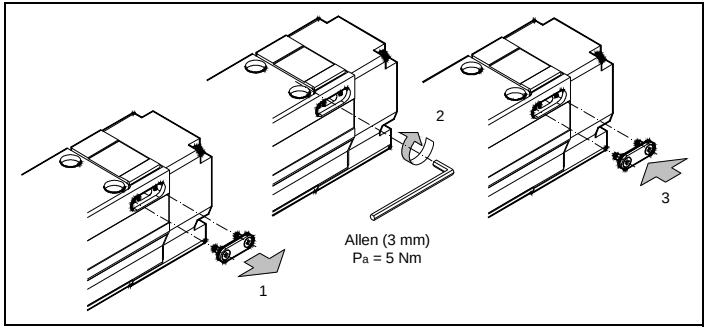
1. Remove the cap to access the tape tensor.
2. Place the reader head approximately at the left end and preset the DRO to 0.
3. Slide the reader head towards the right end and write down the DRO reading “L”.
4. Preset the DRO to 0 in this position.
5. Turn the tape tensor until the DRO displays the value obtained with the formula: (L+90) x 0,00012.
6. Use the formula (L+D+90) x 0.00012 if at the left end, you have not positioned the reader head in the triangle.
7. Put the cap back on.

Note: Both the L value and the one obtained must be given in mm.



Ajustar el fleje mediante un Interferómetro Laser

Adjust the tape with a Laser Interferometer.



Tras calibrar la regla, bloquear el tensor.

After calibrating the scale, lock the tensor.

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